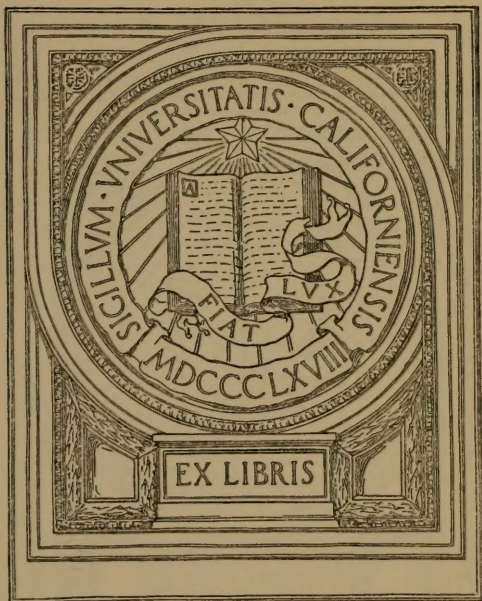





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UNIVERSITY OF CALIFORNIA
AT LOS ANGELES



THE GIFT OF
MAY TREAT MORRISON
IN MEMORY OF
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COCOANUT-TREES, JAMAICA.

HALF-HOURS

OF

TRAVEL AT HOME AND ABROAD

SELECTED AND ARRANGED BY

CHARLES MORRIS

AMERICA

ILLUSTRATED

PHILADELPHIA

J. B. LIPPINCOTT COMPANY

1896

NEW YORK

LOS ANGELES

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PREFACE.

THE world is growing very narrow in these late nineteenth century days. In place of the crawling slowness of former travel, the steamship and steam-railway now fairly hurl travellers over the face of the earth, while by aid of the far-extending wire we are able to talk freely with our neighbors of the antipodes. "From Dan to Beersheba" has now become from New York to New South Wales, or from Chicago to Hong-Kong. And yet this growing neighborliness does not decrease, but rather redoubles, our interest in the scenes and people of foreign lands. Nature retains her variety, nor is man's unity much increased by his growing propinquity. Tropic and Arctic lands are as far apart in condition as ever; Europe differs from Asia, America from Africa, as greatly as of yore; man still presents every grade of development, from the lowest savagery to the highest civilization; and our interest in the marvels of nature and art, the variety of plant and animal life, and the widely varied habits and conditions, modes of thought and action, of mankind, is not likely soon to lose its zest.

It is in view of these facts that we have here endeavored to tell the story of the world, alike of its familiar and its unfamiliar portions, as displayed in the narratives of those who have seen its every part, and particularly of those travellers who first gazed upon the wonders and observed the inhabitants of previously unknown lands, and whose descriptions are therefore those of discoverers. It is re-

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markable what variety has been found to exist in human life and habits, what diversity in scenery and climate, what multiplicity of form in the works of man's hands, what vast complexity in nature's unity. This widely varied prospect is what so deeply interests us in the works of travellers, and in the present work has been gathered a series of descriptive passages covering all regions of the several continents, in the hope that those who have not the time or opportunity to read these many works *in extenso* may find interest and profit in the extracts here given, and be enabled thereby to pass many a pleasant half-hour in the broad domain of travel and adventure.

For the material here employed we are indebted to many travellers old and new, and to the courtesy of numerous publishers and authors. Among these it is desired to acknowledge particularly indebtedness to the following publishers and works: To Harper & Brothers, for selections from Prime's "Tent Life in the Holy Land," Stanley's "Through the Dark Continent," Du Chaillu's "Equatorial Africa," Orton's "The Andes and the Amazon," and Browne's "An American Family in Germany." To Charles Scribner's Sons: Stanley's "In Darkest Africa," Field's "The Greek Islands," Schley's "The Rescue of Greeley," and Finck's "Pacific Coast Scenic Tour." To G. P. Putnam's Sons: Taylor's "Lands of the Saracens," De Amicis's "Holland and its People," and Brace's "The New West." To Houghton, Mifflin & Co.: Melville's "In the Lena Delta" and Hawthorne's "Our Old Home." To Roberts Brothers: Hunt's "Bits of Travel at Home." To H. C. Coates & Co.: Leonowens's "Life and Travel in India," and to the several authors who have courteously granted us similar favors.

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HALF-HOURS OF TRAVEL AT HOME AND ABROAD.

THE FORT WILLIAM HENRY MASSACRE.

JONATHAN CARVER.

[Carver's interesting "Travels through the Interior Parts of North America, in the years 1766, 1767, and 1768," is the source of the narrative given below, relating to an event with which most of our readers are probably familiar from historical reading, though few of them have read the experience of an actual participant. Carver served as a captain in the French and Indian War, and tells this most thrilling narrative of the American wars as an illustrative episode in his subsequent work of travels. He is describing the cruel actions of the Indians in war.]

I HAVE frequently been a spectator of them, and once bore a part in a similar scene. But what added to the horror of it was that I had not the consolation of being able to oppose their savage attacks. Every circumstance of the adventure still dwells on my memory, and enables me to describe with greater perspicuity the brutal fierceness of the Indians when they have surprised or overpowered an enemy.

As a detail of the massacre at Fort William Henry in the year 1757, the scene to which I refer, cannot appear foreign to the design of this publication, but will serve to

give my readers a just idea of the ferocity of this people, I shall take the liberty to insert it, apologizing at the same time for the length of the digression and those egotisms which the relation renders unavoidable.

General Webb, who commanded the English army in North America, which was then encamped at Fort Edward, having intelligence that the French troops under Mons. Montcalm were making some movements towards Fort William Henry, he detached a corps of about fifteen hundred men, consisting of English and provincials, to strengthen the garrison. In this party I went as a volunteer among the latter.

The apprehensions of the English general were not without foundation, for the day after our arrival we saw Lake George (formerly Lake Sacrament), to which it lies contiguous, covered with an immense number of boats, and in a few hours we found our lines attacked by the French general, who had just landed with eleven thousand regulars and Canadians and two thousand Indians. Colonel Munro, a brave officer, commanded in the fort, and had no more than two thousand three hundred men with him, our detachment included.

With these he made a brave defence, and probably would have been able at last to preserve the fort had he been properly supported and permitted to continue his efforts. On every summons to surrender sent by the French general, who offered the most honorable terms, his answer repeatedly was, that he found himself in a condition to repel the most vigorous attacks his besiegers were able to make; and if he thought his present force insufficient, he could soon be supplied with a greater number from the adjacent army.

But the colonel having acquainted General Webb with his situation, and desired he would send him some fresh

troops, the general despatched a messenger to him with a letter, wherein he informed him that it was not in his power to assist him, and therefore gave him orders to surrender up the fort on the best terms he could procure. This packet fell into the hands of the French general, who immediately sent a flag of truce, desiring a conference with the governor.

They accordingly met, attended only by a small guard, in the centre between the lines, when Mons. Montcalm told the colonel that he was come in person to demand possession of the fort, as it belonged to the king, his master. The colonel replied that he knew not how that could be, nor should he surrender it up while it was in his power to defend it.

The French general rejoined, at the same time delivering the packet into the colonel's hand, "By this authority do I make the requisition." The brave governor had no sooner read the contents of it, and was convinced that such were the orders of the commander-in-chief, and not to be disobeyed, than he hung his head in silence, and reluctantly entered into a negotiation.

In consideration of the gallant defence the garrison had made, they were to be permitted to march out with all the honors of war, to be allowed covered wagons to transport their baggage to Fort Edward, and a guard to protect them from the fury of the savages.

The morning after the capitulation was signed, as soon as day broke, the whole garrison, now consisting of about two thousand men, besides women and children, were drawn up within the lines, and on the point of marching off, when great numbers of the Indians gathered about and began to plunder. We were at first in hopes that this was their only view, and suffered them to proceed without opposition. Indeed, it was not in our power to make any,

had we been so inclined, for, though we were permitted to carry off our arms, yet we were not allowed a single round of ammunition. In these hopes, however, we were disappointed; for presently some of them began to attack the sick and wounded, when such as were not able to crawl into the ranks, notwithstanding they endeavored to avert the fury of their enemies by their shrieks or groans, were soon despatched.

Here we were fully in expectation that the disturbance would have concluded, but in a short time we saw the same division driven back, and discovered that we were entirely encircled by the savages. We expected every moment that the guard, which the French, by the articles of capitulation, had agreed to allow us, would have arrived, and put an end to our apprehensions, but none appeared. The Indians now began to strip every one, without exception, of their arms and clothes, and those who made the least resistance felt the weight of their tomahawks.

I happened to be in the rear division, but it was not long before I shared the fate of my companions. Three or four of the savages laid hold of me, and whilst some held their weapons over my head, the others soon disrobed me of my coat, waistcoat, hat, and buckles, omitting not to take from me what money I had in my pocket. As this was transacted close by the passage that led from the lines on to the plain, near which a French sentinel was posted, I ran to him and claimed his protection, but he only called me an English dog, and thrust me with violence back again into the midst of the Indians.

I now endeavored to join a body of our troops that were crowded together at some distance, but innumerable were the blows that were made at me with different weapons as I passed on; luckily, however, the savages were so close together that they could not strike at me without endan-

gering each other, notwithstanding which one of them found means to make a thrust at me with a spear, which grazed my side, and from another I received a wound with the same kind of weapon on my ankle. At length I gained the spot where my countrymen stood, and forced myself into the midst of them. But before I got thus far out of the hands of the Indians the collar and wristbands of my shirt were all that remained of it, and my flesh was scratched and torn in many places by their savage grips.

By this time the warwhoop was given, and the Indians began to murder those that were nearest to them without distinction. It is not in the power of words to give any tolerable idea of the horrid scene that now ensued; men, women, and children were despatched in the most wanton and cruel manner, and immediately scalped. Many of the savages drank the blood of their victims as it flowed warm from the fatal wound.

We now perceived, though too late to avail us, that we were to expect no relief from the French; and that, contrary to the agreement they had so lately signed to allow us a sufficient force to protect us from these insults, they tacitly permitted them; for I could plainly perceive the French officers walking about at some distance, discoursing together with apparent unconcern. For the honor of human nature I would hope that this flagrant breach of every sacred law proceeded rather from the savage disposition of the Indians, which I acknowledge it is sometimes almost impossible to control, and which might now unexpectedly have arrived to a pitch not easily to be restrained, than from any premeditated design in the French commander. An unprejudiced observer would, however, be apt to conclude that a body of ten thousand Christian troops, most Christian troops, had it in their power to prevent the massacre from becoming so general. But what-

ever was the cause from which it arose, the consequences of it were dreadful, and not to be paralleled in modern history.

As the circle in which I stood enclosed by this time was much thinned, and death seemed to be approaching with hasty strides, it was proposed by some of the most resolute to make one vigorous effort, and endeavor to force our way through the savages, the only probable method of preserving our lives that now remained. This, however desperate, was resolved upon, and about twenty of us sprung at once into the midst of them.

In a moment we were separated, and what was the fate of my comrades I could not learn till some months after, when I found that only five or six of them effected their design. Intent only on my own hazardous situation, I endeavored to make my way through my savage enemies in the best manner possible. And I have often been astonished since, when I have recollected with what composure I took, as I did, every necessary step for my preservation. Some I overturned, being at that time young and athletic, and others I passed by, dexterously avoiding their weapons; till at last two very stout chiefs, of the most savage tribes, as I could distinguish by their dress, whose strength I could not resist, laid hold of me by each arm, and began to force me through the crowd.

I now resigned myself to my fate, not doubting but that they intended to despatch me, and then to satiate their vengeance with my blood, as I found they were hurrying me towards a retired swamp that lay at some distance. But before we had got many yards, an English gentleman of some distinction, as I could discover by his breeches, the only covering he had on, which were of fine scarlet velvet, rushed close by us. One of the Indians instantly relinquished his hold, and, springing on this new object, en-

deavored to seize him as his prey; but the gentleman, being strong, threw him on the ground, and would probably have got away, had not he who held my other arm quitted me to assist his brother. I seized the opportunity, and hastened away to join another party of English troops that were yet unbroken, and stood in a body at some distance. But before I had taken many steps I hastily cast my eye towards the gentleman, and saw the Indian's tomahawk gash into his back, and heard him utter his last groan; this added both to my speed and desperation.

I had left this shocking scene but a few yards when a fine boy of about twelve years of age, that had hitherto escaped, came up to me, and begged that I would let him lay hold of me, so that he might stand some chance of getting out of the hands of the savages. I told him that I would give him every assistance in my power, and to this purpose bid him lay hold; but in a few moments he was torn from my side, and by his shrieks I judge was soon demolished. I could not help forgetting my own cares for a minute to lament the fate of so young a sufferer; but it was utterly impossible for me to take any methods to prevent it.

I now got once more into the midst of friends, but we were unable to afford each other any succor. As this was the division that had advanced the farthest from the fort, I thought there might be a possibility (though but a very bare one) of my forcing a way through the outer ranks of the Indians and getting to a neighboring wood, which I perceived at some distance. I was still encouraged to hope by the almost miraculous preservation I had already experienced.

Nor were my hopes vain or the efforts I made ineffectual. Suffice to say that I reached the wood, but by the time I had penetrated a little way into it my breath was so ex-

hausted that I threw myself into a brake, and lay for some minutes apparently at the last gasp. At length I recovered power of respiration, but my apprehensions returned with all their former force when I saw several savages pass by, probably in pursuit of me, at no very great distance.

In this situation I knew not whether it was better to proceed or endeavor to conceal myself where I lay till night came on. Fearing, however, that they would return the same way, I thought it most prudent to get farther from the dreadful scene of my past distresses. Accordingly, striking into another part of the wood, I hastened on as fast as the briers and the loss of one of my shoes would permit me, and, after a slow progress of some hours, gained a hill that overlooked the plain which I had just left, from whence I could discern that the bloody storm still raged with unabated fury.

But not to tire my readers, I shall only add that after passing three days without subsistence, and enduring the severity of the cold dews for three nights, I at length reached Fort Edward; where with proper care my body soon recovered its wonted strength and my mind, as far as the recollection of the late melancholy events would permit, its usual composure.

It was computed that fifteen hundred persons were killed or made prisoners by these savages during this fatal day. Many of the latter were carried off by them and never returned. A few, through favorable accidents, found their way back to their native country after having experienced a long and severe captivity.

The brave Colonel Munro had hastened away, soon after the confusion began, to the French camp to endeavor to procure the guard agreed by the stipulation; but his application proving ineffectual, he remained there till

General Webb sent a party of troops to demand and protect him back to Fort Edward. But these unhappy occurrences, which would probably have been prevented had he been left to pursue his own plans, together with the loss of so many brave fellows, murdered in cold blood, to whose valor he had so lately been a witness, made such an impression on his mind that he did not long survive. He died in about three months of a broken heart, and with truth might it be said that he was an honor to his country.

I mean not to point out the following circumstance as the immediate judgment of Heaven, and intended as an atonement for this slaughter, but I cannot omit that very few of those different tribes of Indians that shared in it ever lived to return home. The small-pox, by means of their communication with the Europeans, found its way among them, and made an equal havoc to what they themselves had done. The methods they pursued on the first attack of that malignant disorder, to abate the fever attending it, rendered it fatal. Whilst their blood was in a state of fermentation, and nature was striving to throw out the peccant matter, they checked her operations by plunging into the water: the consequence was that they died by hundreds. The few that survived were transformed by it into hideous objects, and bore with them to the grave deep indented marks of this much-dreaded disease.

Monsieur Montcalm fell soon after on the plains of Quebec.

WINTER AND SUMMER IN NEW ENGLAND.

HARRIET MARTINEAU.

[The "Society in America" and the "Retrospect of Western Travel," by Harriet Martineau, contain many interesting pictures of life and scenery in the United States. Of the descriptive passages of the latter work we select that detailing her experience of winter weather in Boston, which she seems to have looked upon with true English eyes, and not with the vision of one "to the manner born."]

I BELIEVE no one attempts to praise the climate of New England. The very low average of health there, the prevalence of consumption and of decay of the teeth, are evidences of an unwholesome climate which I believe are universally received as such. The mortality among children throughout the whole country is a dark feature of life in the United States. . . . Wherever we went in the North we heard of the "lung fever" as a common complaint, and children seemed to be as liable to it as grown persons.

The climate is doubtless chiefly to blame for all this, and I do not see how any degree of care could obviate much of the evil. The children must be kept warm within-doors; and the only way of affording them the range of the house is by warming the whole, from the cellar to the garret, by means of a furnace in the hall. This makes all comfortable within; but, then, the risk of going out is very great. There is far less fog and damp than in England, and the perfectly calm, sunny days of midwinter are enduring; but the least breath of wind seems to chill one's very life. I had no idea what the suffering from extreme cold amounted to till one day, in Boston, I walked the

length of the city and back again in a wind, with the thermometer seven degrees and a half below zero. I had been warned of the cold, but was anxious to keep an appointment to attend a meeting. We put on all the merinoes and furs we could muster, but we were insensible of them from the moment the wind reached us. My muff seemed to be made of ice; I almost fancied I should have been warmer without it. We managed getting to the meeting pretty well, the stock of warmth we had brought out with us lasting till then. But we set out cold on our return, and by the time I got home I did not very well know where I was and what I was about. The stupefaction from cold is particularly disagreeable, the sense of pain remaining through it, and I determined not to expose myself to it again. All this must be dangerous to children; and if, to avoid it, they are shut up through the winter, there remains the danger of encountering the ungenial spring. . . .

Every season, however, has its peculiar pleasures, and in the retrospect these shine out brightly, while the evils disappear.

On a December morning you are awakened by the domestic scraping at your hearth. Your anthracite fire has been in all night; and now the ashes are carried away, more coal is put on, and the blower hides the kindly red from you for a time. In half an hour the fire is intense, though, at the other end of the room, everything you touch seems to blister your fingers with cold. If you happen to turn up a corner of the carpet with your foot, it gives out a flash, and your hair crackles as you brush it. Breakfast is always hot, be the weather what it may. The coffee is scalding, and the buckwheat cakes steam when the cover is taken off. Your host's little boy asks whether he may go coasting to-day, and his sisters tell you what days the schools will all go sleighing. You may see boys coasting on

Boston Common all the winter day through, and too many in the streets, where it is not so safe.

To coast is to ride on a board down a frozen slope, and many children do this in the steep streets which lead down to the Common, as well as on the snowy slopes within the enclosure where no carriages go. Some sit on their heels on the board, some on their crossed legs. Some strike their legs out, put their arms akimbo, and so assume an air of defiance amid their velocity. Others prefer lying on their stomachs, and so going headforemost, an attitude whose comfort I could never enter into. Coasting is a wholesome exercise for hardy boys. Of course, they have to walk up the ascent, carrying their boards between every feat of coasting; and this affords them more exercise than they are at all aware of taking.

As for the sleighing, I heard much more than I experienced of its charms. No doubt early association has something to do with the American fondness for this mode of locomotion, and much of the affection which is borne to music, dancing, supping, and all kinds of frolic is transferred to the vehicle in which the frolicking parties are transported. It must be so, I think, or no one would be found to prefer a carriage on runners to a carriage on wheels, except on an untrodden expanse of snow. On a perfectly level and crisp surface I can fancy the smooth, rapid motion to be exceedingly pleasant; but such surfaces are rare in the neighborhood of populous cities. The uncertain, rough motion in streets hillocky with snow, or on roads consisting for the season of a ridge of snow with holes in it, is disagreeable and provocative of headache. I am no rule for others as to liking the bells; but to me their incessant jangle was a great annoyance. Add to this the sitting, without exercise, in a wind caused by the rapidity of the motion, and the list of *désagréments* is complete.

I do not know the author of a description of sleighing which was quoted to me, but I admire it for its fidelity. "Do you want to know what sleighing is like? You can soon try. Set your chair on a spring-board out on the porch on Christmas-day; put your feet in a pailful of powdered ice; have somebody to jingle a bell in one ear, and somebody else to blow into the other with the bellows, and you will have an exact idea of sleighing."

[This quotation would appear to be a variant of Dr. Franklin's recipe for sleighing. As for Miss Martineau's experience "behind the bells," it seems to have been very unfortunate.]

If the morning be fine, you have calls to make, or shopping to do, or some meeting to attend. If the streets be coated with ice, you put on your India-rubber shoes—unsoled—to guard you from slipping. If not, you are pretty sure to measure your length on the pavement before your own door. Some of the handsomest houses in Boston, those which boast the finest flights of steps, have planks laid on the steps during the season of frost, the wood being less slippery than stone. If, as sometimes happens, a warm wind should be suddenly breathing over the snow, you go back to change your shoes, India-rubbers being as slippery in wet as leather soles are on ice. [It must be borne in mind that the writer is speaking of the rubber shoes of sixty years ago.] Nothing is seen in England like the streets of Boston and New York at the end of the season, while the thaw is proceeding. The area of the street had been so raised that passengers could look over the blinds of your ground-floor rooms; when the sidewalks become full of holes and puddles they are cleared, and the passengers are reduced to their proper level; but the middle of the street remains exalted, and the carriages drive along a ridge. Of course, this soon becomes too dangerous, and

for a season ladies and gentlemen walk ; carts tumble, slip, and slide, and get on as they can ; while the mass, now dirty, not only with thaw, but with quantities of refuse vegetables, sweepings of the poor people's houses, and other rubbish which it was difficult to know what to do with while every place was frozen up, daily sinks and dissolves into a composite mud. It was in New York and some of the inferior streets of Boston that I saw this process in its completeness.

If the morning drives are extended beyond the city there is much to delight the eye. The trees are cased in ice ; and when the sun shines out suddenly the whole scene looks like one diffused rainbow, dressed in a brilliancy which can hardly be conceived of in England. On days less bright, the blue harbor spreads in strong contrast with the sheeted snow which extends to its very brink. . . .

The skysights of the colder regions of the United States are resplendent in winter. I saw more of the aurora borealis, more falling stars and other meteors, during my stay in New England than in the whole course of my life before. Every one knows that splendid and mysterious exhibitions have taken place in all the Novembers of the last four years, furnishing interest and business to the astronomical world. The most remarkable exhibitions were in the Novembers of 1833 and 1835, the last of which I saw. . . .

On the 17th of November in question, that of 1835, I was staying in the house of one of the professors of Harvard University at Cambridge. The professor and his son John came in from a lecture at nine o'clock, and told us that it was nearly as light as day, though there was no moon. The sky presented as yet no remarkable appearance, but the fact set us telling stories of skysights. A venerable professor told us of a blood-red heaven which

shone down on a night of the year 1789, when an old lady interpreted the whole French Revolution from what she saw. None of us had any call to prophesying this night. John looked out from time to time while we were about the piano, but our singing had come to a conclusion before he brought us news of a very strange sky. It was now near eleven. We put cloaks and shawls over our heads, and hurried into the garden. It was a mild night, and about as light as with half a moon. There was a beautiful rose-colored flush across the entire heavens, from southeast to northwest. This was every moment brightening, contracting in length, and dilating in breadth.

My host ran off without his hat to call the Natural History professor. On the way he passed a gentleman who was trudging along, pondering the ground. "A remarkable night, sir," cried my host. Sir! how, sir?" replied the pedestrian. "Why, look above your head!" The startled walker ran back to the house he had left to make everybody gaze. There was some debate about ringing the college-bell, but it was agreed that it would cause too much alarm.

The Natural Philosophy professor came forth in curious trim, and his household and ours joined in the road. One lady was in her nightcap, another with a handkerchief tied over her head, while we were cowed in cloaks. The sky was now resplendent. It was like a blood-red dome, a good deal pointed. Streams of a greenish-white light radiated from the centre in all directions. The colors were so deep, especially the red, as to give an opaque appearance to the canopy, and as Orion and the Pleiades and many more stars could be distinctly seen, the whole looked like a vast dome inlaid with constellations. These skysights make one shiver, so new are they, so splendid, so mysterious. We saw the heavens grow pale, and before mid-

night believed that the mighty show was over; but we had the mortification of hearing afterwards that at one o'clock it was brighter than ever, and as light as day.

Such are some of the wintry characteristics of New England.

If I lived in Massachusetts, my residence during the hot months should be beside one of its ponds. These ponds are a peculiarity in New England scenery very striking to the traveller. Geologists tell us of the time when the valleys were chains of lakes; and in many parts the eye of the observer would detect this without the aid of science. There are many fields and clusters of fields of remarkable fertility, lying in basins, the sides of which have much the appearance of the greener and smoother of the dykes of Holland. These suggest the idea of their having been ponds at the first glance. Many remain filled with clear water, the prettiest meres in the world. A cottage on Jamaica Pond, for instance, within an easy ride of Boston, is a luxurious summer abode. I know of one unequalled in its attractions, with its flower-garden, its lawn, with banks shelving down to the mere,—banks dark with nestling pines, from under whose shade the bright track of the moon may be seen, lying cool on the rippling waters. A boat is moored in the cove at hand. The cottage itself is built for coolness, and the broad piazza is draperied with vines, which keep out the sun from the shaded parlor.

The way to make the most of a summer's day in a place like this is to rise at four, mount your horse and ride through the lanes for two hours, finding breakfast ready on your return. If you do not ride, you slip down to the bathing-house on the creek; and, once having closed the door, have the shallow water completely to yourself, carefully avoiding going beyond the deep-water mark, where no one knows how deep the mere may be. After break-

fast you should dress your flowers, before those you gather have quite lost the morning dew. The business of the day, be it what it may, housekeeping, study, teaching, authorship, or charity, will occupy you till dinner at two. You have your dessert carried into the piazza, where, catching glimpses of the mere through the wood on the banks, your watermelon tastes cooler than within, and you have a better chance of a visit from a pair of humming-birds.

You retire to your room, all shaded with green blinds, lie down with a book in your hands, and sleep soundly for two hours at least. When you wake and look out, the shadows are lengthening on the lawn, and the hot haze has melted away. You hear a carriage behind the fence, and conclude that friends from the city are coming to spend the evening with you. They sit within till after tea, telling you that you are living in the sweetest place in the world. When the sun sets you all walk out, dispersing in the shrubbery or on the banks. When the moon shows herself above the opposite woods, the merry voices of the young people are heard from the cove, where the boys are getting out the boat. You stand, with a companion or two, under the pines, watching the progress of the skiff and the receding splash of the oars. If you have any one, as I had, to sing German popular songs to you, the enchantment is all the greater. You are capriciously lighted home by fireflies, and there is your table covered with fruit and iced lemonade. When your friends have left you you would fain forget it is time to rest, and your last act before you sleep is to look out once more from your balcony upon the silvery mere and moonlit lawn.

The only times when I felt disposed to quarrel with the inexhaustible American mirth was on the hottest days of summer. I liked it as well as ever ; but European strength

will not stand more than an hour or two of laughter in such seasons. I remember one day when the American part of the company was as much exhausted as the English. We had gone, a party of six, to spend a long day with a merry household in a country village, and, to avoid the heat, had performed the journey of sixteen miles before ten o'clock. For three hours after our arrival the wit was in full flow; by which time we were all begging for mercy, for we could laugh no longer with any safety. Still, a little more fun was dropped all round, till we found that the only way was to separate, and we all turned out of doors. I cannot conceive how it is that so little has been heard in England of the mirth of the Americans; for certainly nothing in their manner struck and pleased me more. One of the rarest characters among them, and a great treasure to all his sportive neighbors, is a man who cannot take a joke.

The prettiest playthings of summer are the humming-birds. I call them playthings because they are easily tamed, and are not very difficult to take care of for a time. It is impossible to attend to book, work, or conversation while there is a humming-bird in sight, its exercises and vagaries are so rapid and beautiful. Its prettiest attitude is vibrating before a blossom which is tossed in the wind. Its long beak is inserted in the flower, and the bird rises and falls with it, quivering its burnished wings with dazzling rapidity. My friend E—— told me how she had succeeded in taming a pair. One flew into the parlor where she was sitting and perched. E——'s sister stepped out for a branch of honeysuckle, which she stuck up over the mirror. The other bird followed, and the pair alighted on the branch, flew off, and returned to it. E—— procured another branch, and held it on the top of her head; and thither also the little creatures came without fear. She next held it in her

hand, and still they hovered and settled. They bore being shut in for the night, a nest of cotton-wool being provided. Of course, it was impossible to furnish them with honey-suckles enough for food; and sugar-and-water was tried, which they seemed to relish very well.

One day, however, when E—— was out of the room, one of the little creatures was too greedy in the saucer; and, when E—— returned, she found it lying on its side, with its wings stuck to its body and its whole little person clammy with sugar. E—— tried a sponge and warm water: it was too harsh; she tried old linen, but it was not soft enough; it then occurred to her that the softest of all substances is the human tongue. In her love for her little companion she thus cleansed it, and succeeded perfectly, so far as the outward bird was concerned. But though it attempted to fly a little, it never recovered, but soon died of its surfeit. Its mate was, of course, allowed to fly away.

NIAGARA FALLS AND THE THOUSAND ISLANDS.

CHARLES MORRIS.

[Among travellers' descriptions of the natural marvels of this continent, much has been written of perhaps the greatest of them all, the celebrated cataract of the Niagara River. The Thousand Islands have also excited much admiration. Fortunately, these two scenic wonders are sufficiently contiguous to be dealt with in one record, and the compiler of the present work ventures to give his own impressions of them, from a printed statement made some twenty-five years ago.]

Who has not read in story and seen in picture, countless times, how the water goes over at Niagara? I came here expecting to find every curve and plunge of the river appealing like a household thing to my memory. So in

great measure it proved, yet travellers never succeed in exhausting a situation in their narratives; something of the unexpected always remains to freshen the sated appetite of new-comers.

Tourists are apt to be disappointed at first sight of the cataract. Their expectations have been overwhetted; and, moreover, the first glance is usually obtained from the American shore, an edgewise view that gives but an inkling of the full majesty of the scene. Yet even from this point of view we behold the river, almost at our feet, rushing with concentrated energy to the brink of the precipice, and pouring headlong, in an agony of froth and foam, into a fearful void, from which forever rises a rainbow-crowned mist. To stand on the brink and gaze into this terrible abyss, with the foaming waters plunging in a white wall downward, is apt to rouse an undefined desire to cast one's self after the torrent, while minute by minute the mind grows into a realization of the sublimity of Niagara.

But to behold the cataract in the fulness of its might and glory one must cross to the Canadian shore, and make his way on foot from the bridge westward. Carriages will be found in abundance, manned by drivers more importunate than mellifluous; but if the tourist would see the Falls at leisure and from every point of view, he must be obdurate, and resolutely foot his way along the river's precipitous bank.

First, arriving opposite the American Fall, we seat ourselves under a tree, and gaze with admiration on this magnificent water front, spread before us in one broad, straight sheet of milk-white foam, swooping ever downward with graceful undulations, until beaten into mist on the rocks below.

Passing onward, we approach that grand curved reach of falling water, whose sublime aspect has been a fruitful

theme for poet and artist since America has had poetry and art. The Horseshoe Fall is the paragon of cataracts. Sitting on what remains of Table-Rock, and gazing on the tumbling, heaving, foaming world of waters, which seem to fill the whole horizon of vision, the mind becomes oppressed with a feeling of awe, and realizes to its full extent nature's grandest vision.

With one vast leap the broad river shoots headlong into an abyss whose real depth we are left to imagine, since the feet of the cataract are forever hidden in a white cloud of mist, shrouded in a dense veil which no eye can penetrate. At the centre of the curve, where the water is deepest, the creamy whiteness of the remainder of the cataract is replaced by a hue of deep green. It seems one vast sheet of liquid emerald, curving gracefully over the edge of the precipice, and swooping downward with endless change yet endless stability, its green tinge relieved with countless flecks of white foam.

The mind cannot long maintain its high level of appreciation of so grand a scene. The mighty monotony of the view soon loses its absorbing hold on the senses, and from sheer reaction one perforce passes to prosaic conceptions of the situation. For our part, we found ourselves purchasing popped corn from a peripatetic merchant who ludicrously misplaced the h's in his conversation, and, taking a seat above the Falls, where the edge of the rapids swerved in and broke in mimic billows at our feet, we enjoyed mental and creature comforts together.

One need but return to the American side, and cross to the islands which partly fill the river above the Falls, to obtain rest for his overstrained brain among quieter aspects of nature. Goat Island one cannot appreciate without a visit. Travellers, absorbed in the wilder scenery, rarely do justice to its peculiar charm. Instead of the contracted

space one is apt to expect, he finds himself in an area of many acres in extent, probably a mile in circumference, its whole surface to the water's edge covered with dense forest. Passing inward from its shore, scarce twenty steps are taken before every vestige of the river is lost to sight, and on reaching its centre we find ourselves, to all appearance, in the heart of a primeval forest,—only the subdued roar of the rapids reminding us of the grand scene surrounding. On all sides rise huge trunks of oaks and beeches, straight, magnificent trees, many of the beeches seemingly from six to eight feet in circumference, their once smooth bark covered inch by inch with a directory of the names of notoriety-loving visitors. At our feet wild flowers bloom, the twittering of birds is heard overhead, nimble ground-squirrels fearlessly cross our path, soft mosses and thick grass form a verdant carpet, and on all sides nature presents us one of her most charming phases, a picture from Arcadia framed in the heart of a scene of hurry and turmoil undescribable.

Near the edge of the Falls a rickety bridge leads to a small island on which stands Terrapin Tower, which yields a fine outlook upon the Horseshoe Fall, with its mists and rainbows. From the opposite side of Goat Island we pass to the charming little Luna Island, from whose brink one may lave his hand in the edge of the American Fall. From the upper end of Goat Island bridges lead to the Three Sisters. These are small, thickly-timbered islands, standing in the stream far back from the edge of the precipice, but in the very foam and fume of the rapids, the contracted stream dashing under their graceful suspension bridges with frightful speed and roar.

From the bridge joining the two outer islands one may see the rapids in their wildest aspect. Here the river, dashing fiercely onward, plunges over a shelf of rock six

or eight feet deep, and is tossed upward in so tumultuous a turmoil of foam that the heart involuntarily stops beating and the teeth set hard, as if one were preparing for a desperate conflict with the fierce power beneath him. From every point on the shore of the outer island the rapids are seen heaving and tossing as far as the sight can reach, like the waves of a sea fretted by contrary winds, here tossed many feet into the air, there sweeping fiercely over a long ledge of rocks, and ever hurrying forward with eager speed to where in the distance we see a long, curved, liquid edge, with a light mist floating upward and hovering in the air beyond it. Here one hears only the roar of the rapids. Indeed, anywhere in the nearer vicinity, the sound of the rapids is chiefly heard, the voice of the cataract itself predominating only on the Canadian side near the Horseshoe Fall.

Here, on this outreaching island, I sat for hours on the gnarled trunk of a fallen tree that overhung the water, drinking in the grandeur and glory of Niagara with a mental thirst that seemed unquenchable, and feeling in my soul that I could willingly stretch the hours into days and the days into weeks, and still descend with regret from the poetry of life into its prose.

Leaving Niagara, I took car for Lewistown, the railroad running for its whole length in full view of the river, whose lofty and rigidly-erect walls, stretching in unbroken lines for miles below the cataract, give striking evidence of the vast work performed by the stream in cutting its way, century after century, through the ridge of solid limestone that separates the lakes. Far down below the level of the railroad the water is seen, placidly winding through the deep gorge, or speeding onward in rapids, its hue intensely green, its banks as lofty and precipitous as the Palisades of the Hudson.

Before Lewistown is reached the ridge sinks to the river level. At this point the cataract began its long career, inch by inch eating its way backward through the former rapids, until they were converted into one mighty vertical downfall. At Lewistown boat is taken for Toronto, —of which city only a lake view of warehouses and church steeples is seen as we change boats for the lake journey.

For the rest of the day and evening we steamed along in full view of the Canadian shore, an ever-changing panorama of farm lands, sandy bluffs, occasional hamlets, and several towns of some pretensions to size and beauty. Kingston, a city at the head of the lake, is reached at four o'clock in the morning. Immediately after leaving this thriving town the state-rooms begin to disgorge their occupants, for we now enter the broad throat of the St. Lawrence River, and here the Thousand Islands begin. Who that has a soul beyond cakes and ale would let the desire to indulge in his own dreams cheat him from enjoying one of nature's loveliest visions?

For some four hours thereafter the boat runs through an uninterrupted succession of the most beautiful island scenery. These islands number, in fact, more than eighteen hundred, and are of every conceivable size and shape; some so minute that they seem but rock pediments to the single tree that is rooted upon their surface, while the rocky shores of others stretch for a mile or more along the channel. They are all heavily wooded, with here and there a light-house, or a rude hovel, as the only indication of man's contest with primitive nature.

[This description, it may be said, does not apply to the present time, when mansions and hotels have taken possession of many of these islands, and evidences of man's occupancy are somewhat too numerous.]

Every few turns of the wheel reveals some new feature of the scene, unexpected channels cutting through the centre of a long, wooded reach, broad open spaces studded with islets, narrow creek-like channels between rocky island shores, in which the whole river seems contracted to a slender stream, while farther on the channel expands to a mile in width, and glimpses of other channels open behind distant islands. Quick turns in our course plunge us into archipelagos, through which a dozen channels run and wind in every direction. Sudden openings in the wooded shore along which we are swiftly gliding yield glimpses of charming islands, here closing the view, there cut by narrow channels which reveal more distant wooded shores, and lead the imagination suggestively onward till we fancy that scenes of fairy-like beauty lie hidden beyond those leafy coverts, enviously torn from our sight by the remorseless onward flight of the boat. For hours we sit in rapt delight, drinking in new beauty at every turn, and heedless of the fact that the breakfast gong has long since sounded, and the more prosaic of the passengers have allowed their physical to overcome their mental hunger.

One tall, long-whiskered old devotee of "cakes and ale," hailing from somewhere in Ohio, shaped somewhat like a note of interrogation, and sustaining his character by asking everybody all sorts of questions, did not, I am positive, digest his breakfast well, for I took a wicked pleasure in assuring him that we had passed far the most beautiful portions of the scenery while he was engaged in absorbing creature comforts, and that the world beside had nothing to compare with the fairy visions he had lost. Old Buckeye, as I had irreverently christened him, wished his breakfast was in Hades, and at once set out on a tour of interrogation to learn if he could not return by the same route and pick up the lost threads of beauty he had so idly dropped.

Another of our fellow-passengers was an English gentleman of perfect Lord Dundreary pattern, his every movement being so suggestive of those of his stage counterpart as to furnish us an unfailing source of amusement. At Prescott, Canada, a New England college boat-club came on board with their boat, and highly amused the passengers during the remainder of the journey with a long succession of comical songs. Three of them were sons of one of our venerable New England professors, one an unvenerable professor himself, yet their tanned faces, worn habiliments, and wild songs bore so strong a flavor of the backwoods that it was hard mentally to locate them within college walls.

We were roused from dinner by the announcement that the Long Sault Rapid was at hand, and gladly deserted one of the meanest tables we had ever encountered to partake of one of nature's rarest banquets.

The boat was entering what seemed a heaving sea, the waters lifting into dangerous billows, and tossing our craft with unmitigated rudeness, until it became almost impossible to retain a level footing. But the appearance of these rapids was different from what we had been led to expect. The frightful aspect of danger, the rapid downhill plunge of the boat, and all the fear-inspiring adornments of the guide-books, while they might be visible from the shore, did not appear to those on the deck. Apparently the boat was fixed in the heart of a watery turmoil, her onward motion lost in her various upward and sidelong movements, while as for fear, its only evidence lay in little shrieks full of laughter, as the equilibrium of the craft was suddenly destroyed.

Five minutes or so of this experience carried us through the perilous portion of the great rapid, and brought us into safe waters again. The St. Lawrence has various

other rapids between the Long Sault and Montreal, differing in appearance, some of them being, as far as the eye can reach, a succession of crossing and tumbling waves, which give the boat unexpected little heaves, and appear like the waves of a tossing sea. Here the water plunges rapidly down a narrow throat between two islands, there it curves round a rocky shore, on which it breaks in ocean-like billows. But the only point where danger becomes apparent to untrained eyes is at the La Chine Rapids, near Montreal, where the river runs through a narrow foaming channel between two long ridges of rock, over which the water tumbles with a terrible suggestion of peril.

The peak of Montreal mountain has been long visible, and now we rapidly approach the long line of Victoria bridge, the great pride of Canadian engineering. Under this we glide with a gymnast at the mast-head, whose erected feet seem nearly to touch the bridge; and in a short time we round into the wharf and are ashore in the largest city of Canada.

FROM NEW YORK TO WASHINGTON IN 1866.

HENRY LATHAM.

[It is not our purpose to enter into descriptions of the cities of the United States. They are sufficiently familiar already to our readers. But Mr. Latham has given so graphic a picture of the outward aspect of the two leading coast cities and the capital of this country during a past generation that we have been tempted to quote it. It need scarcely be said that this account represents only in embryo these cities as they appear to-day.]

SAFE arrived last night, after spending twelve days of my life at sea. I say last night, as it took us so long to

land and get through the custom-house that it was dark before we reached the Fifth Avenue Hotel. But it was bright daylight and sunshine as we steamed up the splendid harbor of New York, a view which I should have been sorry to have missed. As far as our personal experiences go, the custom-house officers of New York are not half so troublesome as they are said to be. We had nothing to smuggle, but there was a vast amount of smuggling done by some of our fellow-passengers. One man landed with his pocket full of French watches, and another with a splendid Cashmere shawl round his neck. The custom-house officer, searching the next luggage to mine, unearthed two boxes of cigars; of course these were contraband. He spoke as follows: "Which are the best?" Opens box. "Have you a light? I forgot; we must not smoke here. Well, I will take a few to smoke after my supper." Takes twenty cigars, and passes the rest.

December 14, 1866.—I have been on my feet all day, delivering letters of introduction. These are plants that require to be put in early, or they are apt to flower after the sower has quitted the country. The stores of the Broadway are the most wonderfully glorified shops ever seen. Something between a Manchester warehouse and a London club-house.

I have spent all my day in going to and fro in Broadway, the wonderful street of New York; in ten years' time the finest street in the world. At present there are still so many small old houses standing in line with the enormous stores, that the effect is somewhat spoiled, by reason of the ranks not being well dressed. Broadway is now much in the condition of a child's mouth when cutting its second set of teeth,—slightly gappy. The enormous stores look even larger now than they will do when the intervals are filled up. The external splendor of the

shops is chiefly architectural; they make no great display of goods in the windows; but the large size of the rooms within enables them to set out and exhibit many times the amount of goods that an English shop-keeper shows.

The city of New York is on the southern point of Manhattan Island, having the East River running along one side, and the North River or Hudson along the other. Some day far in the future, when the present municipality is purged or swept away, and the splendor of the Thames Embankment scheme has been realized, New York will probably have two lines of quays, planted with trees and edged with warehouses, which will make it one of the finest cities in the world. The business quarter is at the point of the peninsula. The fashionable quarter is to the north, reaching every year farther inland. As the city increases, the stores keep moving northward, taking possession of the houses, and driving the residents farther back. The land is not yet built over up to Central Park, said to be called so because it will be the future centre of the city that is to be.

The concentrated crowd that passes along Broadway in the morning "down-town" to its business, and back in the evening "up-town" to its homes, is enormous; but the pavements are bad for men and abominable for horses: to-day I saw five horses down, and two lying dead. At the same time, allowance must be made for the fact that it has been snowing and thawing and freezing again; but as this is no uncommon state of things in this climate, why pave the streets with flat stones that give no foothold? The "street-cars" are the universal means of conveyance. These are omnibuses running on tramways, but the name of omnibus is unknown: if you speak of a "bus" you are stared at. A young New Yorker, recently returned from London, was escorting his cousin home one evening; as

the way was long, he stopped and said, "Hold on, Mary, and let's take a bus." "No, George, not here in the street," the coy damsel replied. . . .

We went to-day to the top of Trinity Church tower; a beautiful panorama, with the bay of New York to the south, the city stretching away northward, and a great river on either side. But it was bitterly cold at the top, as we had heavy snow yesterday, and the wind was blowing keenly. We went also to the Gold Exchange, and gold happened to be "very sensitive" this morning, in consequence of some rumors from Mexico which made it possible that the time for United States interference was nearer than had been supposed. The noise was deafening; neither the Stock Exchange nor the ring at Epsom at all approach it. All the men engaged in a business which one would suppose required more experience than any other, the buying and selling of gold, seemed to be under twenty-five years of age; most of them much younger, some quite boys. The reason given me was that older heads could not stand the tumult, all gesticulating, all vociferating, every man with a note-book and pencil, crowded round a ring in the centre of the hall like a little cock-pit, to which you descend by steps. Every now and then a man rushes out of the telegraph corner with some news, which oozes out and makes the crowd howl and seethe again. The hands of a big dial on the wall are moved on from time to time, marking the hour of the day and the price of gold. This is the dial of the barometer of national prosperity, marked by gold instead of mercury. . . .

A huge sum of money has been laid out on Central Park, the Bois de Boulogne of New York. When the timber has grown larger it will be very pretty. The ground is rocky, with little depth of soil in it; this makes it difficult to get the trees to grow, but, on the other hand, gives the place a

feature not to be found in our parks or at the Bois, in the large masses of brown sandstone cropping up through the turf here and there, and in the rocky shores of the little lakes.

In the evening we went, by invitation of our courteous banker, to the Assembly at Delmonico's rooms. In this we consider ourselves highly honored and introduced to the best society of New York. The toilets and the diamonds were resplendent, and one figure of the "German" (cotillon), in which the ladies formed two groups in the centre, facing inward with their bright trains spread out behind them, was a splendid piece of color and costume. Prince Doria was there, and most of the magnates of the city looked in. Some of the wealthiest people in the room were pointed out to me as the present representatives of the families of the old Dutch settlers; those are the pedigrees respected here.

December 20, 1866.—We left New York, having stayed exactly a week, and meaning to return again. By rail to Philadelphia, ninety-two miles, through a flat, snow-covered country, which, under the circumstances, looked as dismal as might be. The latter part of our journey lay along the left bank of the Delaware, which we crossed by a long wooden bridge, and arrived at the Continental Hotel just at dusk. It is evident we are moving South. The waiters at this hotel are all darkies.

December 21, 1866.—Philadelphia is a most difficult town just now for pedestrians, the door-steps being all of white marble glazed with ice, and sliding on the pavement may be had in perfection. Spent the best part of the day in slipping about, trying to deliver letters of introduction. The system of naming the streets of Philadelphia and of numbering the houses is extremely ingenious, and answers perfectly when you have made yourself acquainted with

it; but as it takes an ordinary mind a week to find it out, the stranger who stops four or five days is apt to execrate it. All the streets run at right angles to one another, so that a short cut, the joy of the accomplished Londoner, is impossible. It is a chess-board on which the bishop's move is unknown. Nothing diagonal can be done. The city is ruled like the page of a ledger, from top to bottom with streets, from side to side with avenues. It is all divided into squares. When you are first told this, a vision arises of the possibility of cutting across these squares from corner to corner. Not a bit of it: a square at Philadelphia means a solid block of houses, not an open space enclosed by buildings. When you have wandered about for some time, the idea suggests itself that every house is exactly like the house next to it; although the inhabitants have given up the old uniformity of costume, the houses have not; and without this elaborate system of numbering, the inhabitants of Philadelphia would never be able to find their way home.

Nevertheless, if that is the finest town in which its inhabitants are best lodged, Philadelphia is the finest town in the world. It lodges a much smaller population than that of New York in more houses. In no other large town are rents comparatively so cheap. Every decent workingman can afford to have his separate house, with gas and water laid on, and fitted with a bath.

We have been making a study of the negro waiters. Perhaps cold weather affects them; but the first thing about them that strikes you is the apathetic infantine feeble-mindedness of the "colored persons" lately called niggers. I say nothing of the seven colored persons, of various shades, who always sit in a row on a bench in the hall, each with a little clothes-brush in his hand, and never attempt to do anything; I allude to those who minister to

my wants in the coffee-room with utterly unknown dishes. I breakfasted yesterday off dunfish and cream, Indian pudding, and dipped toast; for dinner I had a baked black-fish with soho sauce, and stewed venison with port wine; for vegetables, marrow, squash, and stewed tomatoes; and for pudding, "floating island."

You see there is something exciting about dinner. After you have ordered four courses of the unknown, and your colored person has gone in the direction of the kitchen you sit with the mouth of expectation wide open. Sometimes you get grossly deceived. Yesterday F—— ordered "jole," and was sitting in a state of placid doubt, when his colored person returned with a plate of pickled pork. At present I am quite of the opinion of the wise man who discovered that colored persons are born and grow in exactly the same way as uncolored persons up to the age of thirteen, and that they then cease to develop their skulls and their intelligence. All the waiters in this hotel appear to be just about the age of thirteen. There are two who in wisdom are nearly twelve, and one gray-headed old fellow who is just over fourteen.

[Our traveller contented himself in the way of sight-seeing by following Charles Dickens's path to the Penitentiary, and afterwards visited Girard College. He concludes as follows:]

Even in this city of Penn the distinctive marks of Quakerism are dying out. The Quaker dress does not seem much more common in Philadelphia than in any other city, nor do they use the "thee" and "thou" in the streets; but at their own firesides, where the old people sit, they still speak the old language. A Quaker in the streets is not to be distinguished from other Philadelphians. I was talking to Mr. C—— about this, and he said, "Let me introduce you to a Quaker; I am a member of the church

myself." L—— was not quite clear whether he was a Quaker or not. His parents had been; his sons certainly were not. Some of the best of the Southern soldiers came from the city of the Quakers. There is a story of a Quaker girl, who was exchanging rings with her lover as he set off to join the army; when they parted she said, "Thee must not wear it on thy trigger-finger, George."

Dined with Mr. L——, the publisher. He showed us over his enormous store, which seemed to be a model of discipline and organization, and described the book-market of America as being, like the Union, one and indivisible, and opened his ledger, in which were the names of customers in every State in the Union. He told us that he had about five thousand open accounts with different American booksellers. His policy is to keep in stock everything that a country bookseller requires, from a Bible to a stick of sealing-wax, so that when their stores get low they are able to write to him for everything they want. He contends, as other Philadelphians do, that New York is not the capital of America, but only its chief port of import, and that Philadelphia is the chief centre for distribution. Mr. Hepworth Dixon had been here not long before, and, as was right and fitting in the city of Quakers, a high banquet had been held in honor of the vindicator of William Penn.

[Thence Mr. Latham went to Baltimore, of which he describes the following old-time experience: "When an American train reaches a town it does not dream of pulling up short in a suburb, but advances slowly through the streets; the driver on the engine rings a large bell, and a man on horseback rides in front to clear the way. Thus we entered Baltimore, arrived at the terminus and uncoupled the engine; and then, still sitting in the railway-car, were drawn by a team of horses along the street-rails to the terminus of the Baltimore and Ohio Railway on the other side of the town." He is talking of antediluvian days. We have reformed all that. After some experience in duck

and partridge shooting, and a taste of terrapin soup, he proceeded to Washington. Of his varied experience there we can give but a single out-door example.]

We went this morning over the Capitol, an enormous edifice still in progress, parts of it are continually built on to, and rebuilt, to meet the wants of the legislature. The two new white marble wings are very beautiful and nearly complete, and the dome is on the same scale with them, and of the same material. The centre is now out of proportion since the wings were built, and is of stone, painted white to match the rest in color and preserve it from the frost. If the South had succeeded in seceding it might have sufficed; but now it is bound to grow, and Congress are going to vote the amount of dollars necessary to make the Capitol complete. When completed it will be magnificent.

We are very unlucky in seeing these great marble palaces (for several of the public buildings of Washington are of this material) with the snow upon the ground. Against the pure white snow they appear dingy; under a summer sun they must show to far greater advantage. What ancient Athens appeared like, surrounding its marble temples, I can hardly realize; but the effect of the splendid public buildings in Washington is very much detracted from by the sheds and shanties which are near them. The builders of Washington determined that it should be a great city, and staked out its streets accordingly twice the width and length of any other streets: rightly is it named the city of magnificent distances. But although the Potomac is certainly wide enough, and apparently deep enough to justify a certain amount of trade, and its situation is more central than that of Philadelphia, the town has never grown to fill the outlines traced for it.

To make a Washington street, take one marble temple or

public office, a dozen good houses of brick, and a dozen of wood, and fill in with sheds and fields. Some blight seems to have fallen upon the city. It is the only place we have seen which is not full of growth and vitality. I have even heard its inhabitants tell stories of nightly pig-hunts in the streets, and of the danger of tumbling over a cow on the pavement on a dark night ; but this must refer to by-gone times.

One of the most curious and characteristic of the great public buildings of Washington is the Patent Office, in which a working model is deposited of every patent taken out in the United States for the improvement of machinery.

This assemblage of specimens is an exhibition of which all Americans are proud, as a proof of the activity of American ingenuity working in every direction. Capacity to take out a patent is a quality necessary to make up the character of the perfect citizen. Labor is honorable, but the man who can invent a labor-saving machine is more honorable ; he has gained a step in the great struggle with the powers of nature. An American who has utilized a water-power feels, I take it, two distinct and separate pleasures : first, in that dollars and cents drip off his water-wheel, and, secondly, in that he has inveigled the water-sprites into doing his work. If you tell an American that you are going to Washington, his first remark is not, "Then you will see Congress sitting," but, "Mind you go and see the Patent Office."



NATURAL BRIDGE, VIRGINIA.



THE NATURAL BRIDGE AND TUNNEL OF VIRGINIA.

EDWARD A. POLLARD.

[The Old Dominion—to give Virginia its home title—is full of natural wonders, some of them unsurpassed in beauty and attractiveness elsewhere in the world. In number and variety of mineral springs it stands unequalled; its caverns, Luray and Weyer's, are rich in charms of subterranean scenery; and its two remarkable examples of nature's grandeur, the Natural Bridge and Natural Tunnel, are unique in their peculiar characteristics. Edward A. Pollard, in his "Virginia Tourist," has ably described the various attractions of the Old Dominion, and we select from this work his word picture of the Natural Bridge. He made his way thither from Lynchburg, *via* the James River Canal.]

As the traveller enters the gap of the Blue Ridge from the east, the winding courses of the stage-coach carry him up the mountain's side until he has gained an elevation of hundreds of feet above the James River, over the waters of which the zigzag and rotten road hangs fearfully. On every side are gigantic mountains hemming him in; there are black ravines in the great prison-house; and the lengthened arms of the winds smite the strained ear with the sounds of the rapids below. While he looks at the distance, a mountain rivulet, slight and glittering from amid the primeval forest, dashes across his path, and, leaping from rock to rock, goes joyously on its way.

On the North River the scenes are quieter. Emerging here, the traveller sees a beautiful and fertile country opening before him, while still westward the blue outlines of distant mountains in Rockbridge bound his vision. The water landscape is beautiful. Lovely valleys debouch upon the stream; there are peaceful shadows in the steel-

blue waters, and on the broad shoulders of the cattle on the banks we see the drapery of the shadows of the trees beneath which they rest. The fisherman standing leg-deep in the water can see his face as in a mirror.

But at present our way does not lie through these scenes. The canal-boat is taking us along the James in the moonlit night, and by the time the day has broken we are within two miles of the Natural Bridge. A rickety team awaits us at the lock-house where we disembark. Through an air filled with golden vapor, and with the mists of the morning yet hanging in the trees by the wayside, we proceed on our journey. The old stage-coach lumbers along under the thick, overhanging boughs of the forest pines, which ever and anon scrape its top or strike in through the windows, scattering the dew-drops in the very faces of the passengers, or perhaps smiting their cheeks with their sharp-pointed leaves.

The first view of the bridge is obtained half a mile from it at a turn on the stage-road. It is revealed with the suddenness of an apparition. Raised a hundred feet above the highest trees of the forest, and relieved against the purple side of a distant mountain, a whitish-gray arch is seen, in the effect of distance as perfect and clean-cut an arch as its Egyptian inventor could have defined. The tops of trees are waving in the interval, the upper half of which we only see, and the stupendous arch that spans the upper air is relieved from the first impression that it is man's masonry, the work of art, by the fifteen or twenty feet of soil that it supports, in which trees and shrubbery are firmly embedded,—the verdant crown and testimony of nature's great work. And here we are divested of an imagination which we believe is popular, that the bridge is merely a huge slab of rock thrown across a chasm, or some such hasty and violent arrangement. It is no such thing. The

arch and whole interval are contained in one solid rock ; the average width of that which makes the bridge is eighty feet, and beyond this the rock extends for a hundred feet or so in mural precipices, divided by only a single fissure, that makes a natural pier on the upper side of the bridge, and up which climb the hardy firs, ascending step by step on the noble rock-work till they overshadow you.

This mighty rock, a single mass sunk in the earth's side, of which even what appears is stupendous, is of the same geological character,—of limestone covered to the depth of from four to six feet with alluvial and clayey earth. The span of the arch runs from forty-five to sixty feet wide, and its height to the under line is one hundred and ninety-six feet, and to the head two hundred and fifteen feet. The form of the arch approaches to the elliptical ; the stage-road which passes over the bridge runs from north to south, with an acclivity of thirty-five degrees, and the arch is carried over on a diagonal line,—the very line of all others the most difficult for the architect to realize, and the one best calculated for picturesque effects. It is the proportions of art in this wild, strange work of nature, its adjustment in the very perfection of mechanical skill, its apparently deliberate purpose, that create an interest the most curious and thoughtful. The deep ravine over which it sweeps, and through which traverses the beautiful Cedar Creek, is not otherwise easily passed for several miles, either above or below the bridge. It is needful to the spot, and yet so little likely to have survived the great fracture, the evidences of which are visible around, and which has made a fissure of about ninety feet through the breadth of a rock-ribbed hill, that we are at first disposed to reflect upon it as the work of man. It is only when we contemplate its full measure of grandeur that we are assured it is the work of God. We have the pier, the arch,

the studied angle of ascent; and that nothing might be wanted in the evidences of design, the bridge is guarded by a parapet of rocks, so covered with fine shrubs and trees that a person travelling the stage-road running over it would, if not informed of the curiosity, pass it unnoticed.

But let him approach through the foliage to the side. More than two hundred feet below is the creek, apparently motionless, except where it flashes with light as it breaks on an obstruction in the channel; there are trees, attaining to grander heights as they ascend the face of the pier; and far below this bed of verdure the majestic rock rises with the decision of a wall, and the spectator shrinks from contemplating the grand but cruel depths, and turns away with dizzy sensations. But the most effective view is from the base of the bridge, where you descend by a circuitous and romantic path. Even to escape from the hot sun into these verdant and cool bottoms is of itself a luxury, and it prepares you for the deliberate enjoyment of the scene. Everything reposes in the most delightful shade, set off by the streaming rays of the sun, which shoot across the head of the picture far above you, and sweeten with softer touches the solitude below.

Standing by the rippling, gushing waters of the creek, and raising your eyes to the arch, massive and yet light and beautiful from its height, its elevation apparently increased by the narrowness of its piers and by its projection on the blue sky, you gaze on the great work of nature in wonder and astonishment. Yet a hundred beauties beckon you from the severe emotion of the sublime. When you have sustained this view of the arch raised against the sky, its black patches here and there shaped by imagination into grand and weird figures,—among them the eagle, the lion's head, and the heroic countenance of Washington; when you have taken in the proportions and circumstances

of this elevated and wide span of rock,—so wide that the skies seem to slope from it to the horizon,—you are called to investigate other parts of the scene which strain the emotions less, and are distributed around in almost endless variety.

Looking through the arch, the eye is engaged with a various vista. Just beyond rises the frayed, unseamed wall of rock; the purple mountains stand out in the background; beneath them is a rank of hills and matted woods enclosing the dell below, while the creek coursing away from them appears to have been fed in their recesses. A few feet above the bridge the stream deflects, and invites to a point of view of the most curious effect. Taking a few steps backward, moving diagonally on the course of the stream, we see the interval of sky between the great abutments gradually shut out; thus apparently joined or lapped over, they give the effect of the face of a rock, with a straight seam running down it, and the imagination seizes the picture as of mighty gates closed upon us. We are shut in a wild and perturbed scene by these gates of hell; behind and around us is the contracted and high boundary of mountains and hills, and in this close and vexed scene we are for a moment prisoners.

Now let us move across, step by step, to a position fronting where these gates apparently close. Slowly they seem to swing open on unseen and noiseless hinges; wider and wider grows the happy interval of sky, until at last wide open stands the gate-way raised above the forest, resting as it were on the brow of heaven,—a world lying beyond it, its rivers and its hills expanding themselves to the light and splendor of the unshadowed day.

To an observer of both places a comparison is naturally suggested between the Natural Bridge and Niagara Falls in respect of the sublime and the beautiful; and, indeed,

as in this respect the two greatest works of nature on this continent, they may well be used as illustrations in our American schools of æsthetics. The first is unique in its aspects of nature like art; it is nature with the proportions of art. In its expressions of power, in its concentration of emotion, as when we look at it distinct or complete, it is truly sublime; and its effect is alleviated (for it is a maxim in æsthetics that the sublime cannot be long sustained) by the picturesque scenery which surrounds it. It is a greater natural curiosity and more wonderful than Niagara, although it lacks the elements of sublimity which the other has in sound, and of the visible, actual struggle in which it displays the powers of nature. Niagara is a living thing, while the Natural Bridge is *monumental*. The first represents the sublime as allied to the terrific,—in contemplating it we are overwhelmed with a sense of our insignificance; while the Natural Bridge associates the sublime with the pleasing and curious, and, not transporting us as violently as Niagara, entertains us more equably, and dismisses us, we think, with more distinct and fruitful perceptions of the grandeur and beneficence and variety of nature which have been distributed in the picture.

[Washington, a century and a half ago, carved his name at a high elevation on the rock walls of the abyss. In 1818 these walls were climbed to the top by James H. Piper, a student of Washington College, Virginia. The narrative here given of this daring feat is from the pen of William A. Caruthers.]

Mr. Piper, the hero of the occasion, commenced climbing on the opposite side of the creek from the one by which the pathway ascends the ravine. He began down on the banks of the brook so far that we did not know where he had gone, and were only apprised of his whereabouts by his shouting above our heads. When we looked up, he was

standing apparently right under the arch, I suppose a hundred feet from the bottom, and that on the smooth side, which is generally considered inaccessible without a ladder. He was standing far above the spot where General Washington is said to have inscribed his name when a youth. The ledge of the rock by which he ascended to this perilous height does not appear from below to be three inches wide, and runs almost at right angles to the abutment of the bridge. . . .

The ledge of rock on which he was standing appeared so narrow to us below as to make us believe his position a very perilous one, and we earnestly entreated him to come down. He answered us with loud shouts of derision. . . .

He soon after descended from that side, crossed the brook, and commenced climbing on the side by which all visitors ascend the ravine. He first mounted the rocks on this side, as he had done on the other, far down the abutment, but not so far as on the opposite side. The projecting ledge may be distinctly seen by any visitor. It commences four or five feet from the pathway on the lower side, and winds round, gradually ascending, until it meets the cleft of rock over which the celebrated cedar stump hangs. Following this ledge to its termination, it brought him thirty or forty feet from the ground, and placed him between two deep fissures, one on each side of the gigantic column of rock on which the aforementioned cedar stump stands.

This column stands out from the bridge, as separate and distinct as if placed there by nature on purpose for an observatory to the wonderful arch and ravine which it overlooks. A huge crack or fissure extends from its base to the summit; indeed, it is cracked on both sides, but much more perceptibly on one side than the other. Both of these fissures are thickly overgrown with bushes, and numerous

roots project into them from trees growing on the precipice. It was between these that the aforementioned ledge conducted him. Here he stopped, pulled off his coat and shoes and threw them down to me. And this, in my opinion, is a sufficient refutation of the story so often told, that he went up to inscribe his name, and ascended so high that he found it more difficult to return than to go forward. He could have returned easily from the point where he disencumbered himself, but the fact that he did thus prepare so early, and so near the ground, and after he had ascended more than double that height on the other side, is clear proof that to inscribe his name was not, and to climb the bridge was, his object. He had already inscribed his name above Washington himself more than fifty feet.

Around the face of this huge column, and between the clefts, he now moved backward and forward, still ascending as he found convenient foothold. When he had ascended about one hundred and seventy feet from the earth, and had reached the point where the pillar overhangs the ravine, his heart seemed to fail him. He stopped, and seemed to us to be balancing midway between heaven and earth. We were in dread suspense, expecting every moment to see him dashed in atoms at our feet. We had already exhausted our powers of entreaty in persuading him to return, but all to no purpose. Now it was perilous even to speak to him, and very difficult to carry on conversation at all, from the immense height to which he had ascended, and the noise made by the bubbling of the little brook as it tumbled in tiny cascades over its rocky bed at our feet. At length he seemed to discover that one of the clefts before mentioned retreated backward from the overhanging position of the pillar. Into this he sprang at once, and was soon out of sight and out of danger.

There is not a word of truth in all that story about our

hauling him up with ropes, and his fainting away so soon as he landed on the summit. Those acquainted with the localities will at once perceive its absurdity; for we were beneath the arch, and it is half a mile round to the top, and for the most part up a ragged mountain. Instead of fainting away, Mr. Piper proceeded down the hill to meet us and obtain his hat and shoes. We met about half-way, and then he lay down for a few moments to recover himself of his fatigue.

[Virginia possesses another marvel of nature's handiwork of the same general character as the Natural Bridge, and of which Mr. Pollard's description may here fitly be given.]

After progressing about three miles from the ford of the Clinch River, and after having repeatedly crossed its crooked tributary, Stock Creek, we come to a small mountain or globular hill which is our wondrous destination, for here is the Natural Tunnel. There is nothing which advertises in advance this great wonder, or in any way excites the expectations of the traveller. There is a common road, from which we depart a few hundred yards to make a half circuit of the base of the mountain, that goes clean over the ridge, leading to a settlement some miles farther, called Rye Cove, and which was once the abode of a fierce Indian tribe. This main road goes over the arch of the tunnel, furnishing a curious convenience to the traveller, of which he would be unaware, seeing nothing through the foliage but glimpses of the mural rocks that guard and sustain the termination of the secret passage-way many hundred feet below him. It is from this convenience that the neighboring people name the gigantic work of nature we are proceeding to explore a natural bridge. But this name is certainly insufficient and paltry for a rock-work that on one flank at least extends

some eight hundred feet, and which if regarded with reference to the breadth of the interval it spans, is, in fact, a complication of bridges, arranged, as we shall presently see, in one single massive spectacle.

The western face of the tunnel, near which we dismount, continues partly concealed from view, or is imperfectly exposed until we nearly approach it, the immense rock which is perforated being here dressed with the thick foliage of the spruce-pine, and the harsh surface adorned with a beautiful tracery of vines and creepers. At last is seen the entrance of what appears to be a huge subterranean cavern or grotto, into which the stream disappears; a towering rock rising here about two hundred feet above the surface of the stream, and a rude entrance gouged into it, varying in width, as far as the eye can reach, from one hundred to one hundred and fifty feet, and rising in a clear vault from seventy to eighty feet above the floor. The view here terminates in the very blackness of darkness; it is broken on the first curve of the tunnel. The bed of the stream, from which the water has disappeared on account of the drouth, the reduced currents sinking to lower subterranean channels, is piled with great irregular rocks, on the sharp points of which we stumble and cut our hands: there is no foothold but on rocks, and it is only when we have struggled through the awful, cruel darkness, holding up some feeble lights in it, and issued into the broad sunshine, that we find we have travelled nearly two hundred yards (or say, more exactly, five hundred feet) through one solid rock, in which there is not an inch of soil, not a seam, not a cleft, and which, even beyond the debouchure of the tunnel, yet runs away a hundred yards in a wall five hundred feet high, as clean and whetted as the work of the mason.

But we must not anticipate this majestic scene, "won-

derful beyond all wondrous measure." Happily, in entering the tunnel from the western side we have adopted the course of exploration which affords a gradual ascent of the emotions, until at last they tower to the standard of a perfect sublimity. The course of the tunnel may be described as a continuous curve: it resembles, indeed, a prostrate *∞*. For a distance of twenty yards midway of this course we are excluded from a view of either entrance, and the darkness is about that of a night with one quarter of the moon. The vault becomes lower here—in some places scarcely more than thirty feet high—and springs immediately from the floor. The situation is awful and oppressive: the voice sounds unnatural, and rumbles strangely and fearfully along the arch of stone. We are encoffined in the solid rock: there is a strange pang in the beating heart in its imprisonment, so *impenetrable*, black, hopeless, and we hurry to meet the light of day. In that light we are disentombed: we cast off the confinements of the black space through which we have passed, and we are instantly introduced to a scene so luminous and majestic that in a moment our trembling eyes are captivated and our hearts lifted in unutterable worship of the Creator's works.

It is that sheer wall of rock which we have already mentioned, where the arch and other side of the tunnel break away into the mountain slope; a high wall, slightly impending; an amphitheatre, extending one hundred yards, of awful precipices; a clean battlement, without a joint in it, five hundred feet high. And this splendid height and breadth of stone, that a thousand storms have polished, leaving not a cleft of soil in it,—this huge, unjointed masonry raised against the sky, gray and weather-stained, with glittering patches of light on it,—is yet part of the same huge rock which towered at the farther end of the

tunnel, and through whose seamless cavity we have travelled two hundred yards. It is in this view that the mystery of the scene seizes the mind, and the last element of sublimity is added to it. It is in this view that the Natural Tunnel we had come to see as a mere "curiosity" takes rank among the greatest wonders of the world. What power, what possible imaginable agency of nature, could have worked out this stupendous scene? . . .

Turning our eyes away from the battlement of rock to the opposite side of the ravine, a new revelation of the grand and picturesque awaits us. Here a gigantic cliff, but one broken with rock and soil, and threaded to its summit by a sapling growth of the buckeye, the linden, and the pine, rises almost perpendicularly from the water's edge to a height almost equal to that of the opposite wall of rock. A natural platform is seen to project over it, and yet a few yards farther there is an insulated cliff, a cyclopean *chimney*, so to speak, scarcely more than a foot square at its top, rising in the form of a turret at least sixty feet above its basement, which is a portion of the imposing cliff we have mentioned. It is at once perceived that here are two points of view that will give us new and perhaps the most imposing aspects of the scene. To attain these points, however, it is necessary to make a circuit of half a mile; and the sinking sun admonishes us to defer this new interest of the scene until to-morrow. . . .

We remounted for the tunnel in the early morning, and were soon to find that the rising sun was to give a new and unexpected glory to the scene. This time we ascend the mountain instead of deflecting as before. The road is easy; there are no difficulties of access to the points of view from the top of the tunnel, and they are undoubtedly the grandest. We pass to the platform before described by a few steps from the main road. It is a slab of rock projecting from an

open patch of ground ; a dead cedar-tree is standing at its edge, throwing its gnarled and twisted arms, as in wild and widowed sorrow, over the awful scene below. We now see the great opposite amphitheatre of rock in added grandeur, for we see it from above,—we see it across a chasm nine hundred feet wide and five hundred feet deep, and the exposure being almost exactly eastern, the long spears of the rising sun are being shattered on it. The effect is inexpressibly grand. But there is one more circumstance to be added to the scene ; we do not see from this observatory the arch, the entrance of the tunnel. A few yards farther the fearful chimney-shaped rock invites to a more commanding view, but the ascent is dangerous ; the stone on top is loose, and so narrow that two persons can scarcely stand on it. A single misstep, a moment's loss of balance, and we would fall into eternity. But now the sense of peril is lost, or is rather mingled, in the grandeur of the scene. It is a panoramic view. We have now the whole sweep of the mural precipice opposite ; the sun's glitter is incessant on the polished stone ; the trees which fringe the bottom appear now scarcely more than shrubs ; the entrance of the tunnel has now come into view, and that which yesterday we thought so high and wide, now appears, from our amazing height, as a stooped door-way. We imagine the gloomy entrance into a cave of Erebus and Death, the broken rocks lying within which look like black and mangled entrails. It is a fearful picture,—it is that of a supernatural abode.

[This marvel of nature is not without its tradition,—one of Indian origin,—in which is repeated, with suitable variations, the familiar Lover's Leap narrative. A more prosaic and modern interest attaches to it, in its having been chosen as the route of a railroad, nature's contribution of a passage through a difficult mountain wall.]

PLANTATION LIFE IN WAR TIMES.

WILLIAM HOWARD RUSSELL.

[Russell, of former celebrity as war correspondent of *The Times*, visited the seceded States during the early period of the American Civil War. His letters thence, published later as "Pictures of Southern Life," are full of graphic descriptions of scenes and feelings in the Confederate States during the era of enthusiasm and hopefulness, before the war had borne its harvest of doubt and misery. It is not our purpose, however, to give his experiences in this special field. It is travel, not war, with which we are concerned, and we confine ourself to an account of a visit to a plantation in the vicinity of Charleston. A short preliminary sketch of the ebb and flow of rumor in war times, however, may be of interest.]

THE rolling fire of the revolution is fast sweeping over the prairie, and one must fly before it or burn. I am obliged to see all that can be seen of the South at once, and then, armed with such safeguards as I can procure, to make an effort to recover my communications. Bridges broken, rails torn up, telegraphs pulled down,—I am quite in the air, and air charged with powder and fire. One of the most extraordinary books in the world could be made out of the cuttings and parings of the newspapers which have been published within the last few days. The judgments, statements, asseverations of the press, everywhere necessarily hasty, ill-sifted, and off-hand, do not aspire to even an ephemeral existence here. They are of use if they serve the purpose of the moment, and of the little boys who commence their childhood in deceit, and continue to adolescence in iniquity, by giving vocal utterance to the "sensational" headings of the journals they retail so sharply and so curtly.

Talk of the superstition of the Middle Ages, or of the credulity of the more advanced period of rural life; laugh at the Holy Coat of Treves, or groan over the Lady of Salette; deplore the faith in winking pictures, or in a *communiqué* of the *Moniteur*; moralize on the superstition which discovers more in the liquefaction of the ichor of St. Gennaro than a chemical trick; but if you desire to understand how far faith can see and trust among the people who consider themselves the most civilized and intelligent in the world, you will study the American journals, and read the telegrams which appear in them.

One day the Seventh New York Regiment is destroyed for the edification of the South, and is cut up into such small pieces that none of it is ever seen afterwards. The next day it marches into Washington or Annapolis, all the better for the process. Another, in order to encourage the North, it is said that hecatombs of dead were carried out of Fort Moultrie, packed up, for easy travelling, in boxes. Again, to irritate both, it is credibly stated that Lord Lyons is going to interfere, or that an Anglo-French fleet is coming to watch the ports; and so on, through a wild play of fancy, inexact in line, as though the batteries were charged with the aurora borealis or summer lightning, instead of the respectable, steady, manageable offspring of acid and metal. . . .

I am now, however, dealing with South Carolina, which has been the *fons et origo* of the secession doctrines and their development into the full life of the Confederate States. The whole foundation on which South Carolina rests is cotton and a certain amount of rice; or rather she bases her whole fabric on the necessity which exists in Europe for those products of her soil, believing and asserting, as she does, that England and France cannot and will not do without them. Cotton, without a market, is so

much flocculent matter encumbering the ground. Rice, without demand for it, is unsalable grain in store and on the field. Cotton at ten cents a pound is boundless prosperity, empire, and superiority, and rice and grain need no longer be regarded.

In the matter of slave labor, South Carolina argues pretty much in this way: England and France require our products. In order to meet their wants we must cultivate our soil. There is only one way of doing so. The white man cannot live on our land at certain seasons of the year; he cannot work in the manner required by the crops. He must, therefore, employ a race suited to the labor, and that is a race which will only work when it is obliged to do so.

[And so on throughout the old argument, which, fortunately, the logic of time has in great measure disproved. But, leaving this phase of the subject, we shall accompany our traveller on a visit to the land of rice and slave labor.]

Early one morning I started in a steamer to visit a plantation in the Pedee and Macamaw district, in the island coast of the State, north of Charleston. Passing Sumter, on which men are busily engaged, under the Confederate flag, in making good damages and mounting guns, we put out a few miles to sea, and with the low sandy shore, dotted with soldiers and guard-houses and clumps of trees, on our left, in a few hours pass the Santee River, and enter an estuary into which the Pedee and Macamaw run a few miles farther to the northwest.

The steamer ran alongside a jetty and pier, which was crowded by men in uniform, waiting for the news and for supplies of creature-comforts. Ladies were cantering along the fine hard beach, and some gigs and tax-carts, fully laden, rolled along very much as one sees them at Scar-

borough. The soldiers on the pier were all gentlemen of the county. Some, dressed in gray tunics and yellow facings, in high felt-hats and plumes and jack-boots, would have done no discredit in face, figure, and bearing to the gayest cavaliers who ever thundered at the heels of Prince Rupert. Their horses, full of Carolinian fire and mettle, stood picketed under the trees along the margin of the beach. Among these men, who had been doing the duty of common troopers in patrolling the sea-coast, were gentlemen possessed of large estates and princely fortunes; and one who stood among them was pointed out to me as captain of a company, for whose use his liberality provided unbounded daily libations of champagne, and the best luxuries which French ingenuity can safely imprison in those well-known caskets with which Crimean warriors were not unacquainted at the close of the campaign.

They were eager for news, which was shouted out to them by their friends in the steamer, and one was struck by the intimate personal cordiality and familiar acquaintance which existed among them. Three heavy guns, mounted in an earthwork defended by palisades, covered the beach and the landing-place, and the garrison was to have been reinforced by a regiment from Charleston, which, however, had not got in readiness to go up on our steamer, owing to some little difficulties between the volunteers, their officers, and the quartermaster-general's department.

As the "Nina" approaches the tumble-down wharf, two or three citizens advance from the shade of shaky sheds to welcome us, and a few country vehicles and light phaetons are drawn forth from the same shelter to receive the passengers, while the negro boys and girls who have been playing upon the bales of cotton and barrels of rice, which represent the trade of the place on the wharf, take up

commanding positions for the better observation of our proceedings. There is an air of quaint simplicity and old-fashioned quiet about Georgetown, refreshingly antagonistic to the bustle and tumult of most American cities. While waiting for our vehicle we enjoyed the hospitality of one of our friends, who took us into an old-fashioned angular wooden mansion, more than a century old, still sound in every timber, and testifying in its quaint wainscotings, and the rigid framework of door and window, to the durability of its cypress timbers and the preservative character of the atmosphere. In early days it was the crack house of the old settlement, and the residence of the founder of the female branch of the family of our host, who now only makes it his halting-place when passing to and fro between Charleston and his plantation, leaving it the year round in charge of an old servant and her grandchild. Rose-trees and flowering shrubs clustered before the porch and filled the garden in front, and the establishment gave me a good idea of a London merchant's retreat about Chelsea a hundred and fifty years ago.

At length we were ready for our journey, and, mounted in two light covered vehicles, proceeded along the sandy track, which, after a while, led us to a deep cut in the bosom of the woods, where silence was only broken by the cry of a woodpecker, the boom of a crane, or the sharp challenge of the jay. For miles we passed through the shadow of this forest, meeting only two or three vehicles, containing female planterdom on little excursions of pleasure or business, who smiled their welcome as we passed. Arrived at a deep chocolate-colored stream, called Black River, full of fish and alligators, we find a flat large enough to accommodate vehicles and passengers, and propelled by two negroes pulling upon a stretched rope, in the manner usual in the ferry-boats of Switzerland, ready for our reeption.

Another drive through a more open country, and we reach a fine grove of pine and live-oak, which melts away into a shrubbery, guarded by a rustic gate-way, passing through which, we are brought by a sudden turn into the planter's house, buried in trees, which dispute with the greensward and with wild flower-beds every yard of the space which lies between the hall-door and the waters of the Pedee; and in a few minutes, as we gaze over the expanse of fields just tinged with green by the first life of the early rice crops, marked by the deep water cuts, and bounded by a fringe of unceasing forest, the chimneys of the steamer we had left at Georgetown gliding as it were through the fields indicate the existence of another navigable river still beyond.

Leaving with regret the veranda which commanded so charming a foreground, we enter the house, and are reminded by its low-browed, old-fashioned rooms, of the country houses yet to be found in parts of Ireland or on the Scottish border, with additions, made by the luxury and love of foreign travel, of more than one generation of educated Southern planters. Paintings from Italy illustrate the walls, in juxtaposition with interesting portraits of early colonial governors and their lovely womankind, limned with no uncertain hand, and full of the vigor of touch and naturalness of drapery of which Copley has left us too few exemplars; and one portrait of Benjamin West claims for itself such honor as his own pencil can give. An excellent library—filled with collections of French and English classics, and with those ponderous editions of Voltaire, Rousseau, the *mémoires pour servir*, books of travel and history such as delighted our forefathers in the last century, and many works of American and general history—affords ample occupation for a rainy day.

But, alas! these, and all things good which else the house

affords, can be enjoyed but for a brief season. Just as nature has expanded every charm, developed every grace, and clothed the scene with all the beauty of opened flower, of ripening grain, and of mature vegetation, on the wings of the wind the poisoned breath comes, borne to the home of the white man, and he must fly before it or perish. The books lie unopened on their shelves, the flower blooms and dies unheeded, and, pity 'tis true, the old Madeira garnered 'neath the roof settles down for a fresh lease of life, and sets about its solitary task of acquiring a finer flavor for the infrequent lips of its banished master and his welcome visitors. This is the story, at least, that we hear on all sides, and such is the tale repeated to us beneath the porch, when the moon enhances while softening the loveliness of the scene, and the rich melody of mocking-birds fills the grove.

Within these hospitable doors Horace might banquet better than he did with Nasidienus, and drink such wine as can only be found among the descendants of the ancestry who, improvident enough in all else, learnt the wisdom of bottling up choice old Bual and Sercial ere the demon of oidium had dried up their generous sources forever. To these must be added excellent bread, ingenious varieties of the *galette*, compounded now of rice and now of Indian meal, delicious butter and fruits, all good of their kind. And is there anything bitter rising up from the bottom of the social bowl? My black friends who attend on me are grave as Mussulman Khitmutgars. They are attired in liveries, and wear white cravats and Berlin gloves. At night when we retire, off they go to their outer darkness in the small settlement of negrohood, which is separated from our house by a wooden palisade. Their fidelity is undoubted. The house breathes an air of security. The doors and windows are unlocked. There is but one gun, a fowling-piece, on the premises. No planter here-

abouts has any dread of his slaves. But I have seen, within the short time I have been in this part of the world, several dreadful accounts of murder and violence, in which masters suffered at the hands of their slaves. There is something suspicious in the constant, never-ending statement that "we are not afraid of our slaves." The curfew and the night patrol in the streets, the prisons and watch-houses, and the police regulations, prove that strict supervision, at all events, is needed and necessary. My host is a kind man and a good master. If slaves are happy anywhere, they should be so with him.

These people are fed by their master. They have upward of half a pound per diem of fat pork, and corn in abundance. They rear poultry and sell their chickens and eggs to the house. They are clothed by their master. He keeps them in sickness as in health. Now and then there are gifts of tobacco and molasses for the deserving. There was little labor going on in the fields, for the rice has been just exerting itself to get its head above water. These fields yield plentifully; for the waters of the river are fat, and they are let in whenever the planter requires it, by means of floodgates and small canals, through which the flats can carry their loads of grain to the river for loading the steamers.

[Following our traveller in his peregrinations through the South, we next take him up on a sugar plantation on the Mississippi. The part of his journey in which we now find him is to be taken by boat.]

Charon pushed his skiff into the water—there was a good deal of rain in it—in shape of snuffer-dish, some ten feet long and a foot deep. I got in, and the conscious waters immediately began vigorously spurting through the cotton wadding wherewith the craft was calked. Had we got out into the stream we should have had a swim for it,

and they do say the Mississippi is the most dangerous river for that healthful exercise in the known world.

"Why! deuce take you" (I said at least that, in my wrath), "don't you see the boat is leaky?"

"See it now for true, massa. Nobody able to tell dat till massa get in, tho'."

Another skiff proved to be stanch. I bade good-by to my friend, and sat down in my boat, which was soon forced along up-stream close to the bank, in order to get a good start across to the other side. The view, from my lonely position, was curious, but not at all picturesque. The landscape had disappeared at once. The world was bounded on both sides by a high bank, and was constituted by a broad river,—just as if one were sailing down an open sewer of enormous length and breadth. Above the bank rose, however, the tops of tall trees and the chimneys of sugar-houses. A row of a quarter of an hour brought us to the levee on the other side. I ascended the bank, and directly in front of me, across the road, appeared a carriage gateway and wickets of wood, painted white in a line of park palings of the same material, which extended up and down the road far as the eye could follow, and guarded wide-spread fields of maize and sugar-cane. An avenue of trees, with branches close set, drooping and overarching a walk paved with red brick, led to the house, the porch of which was just visible at the extremity of the lawn, with clustering flowers, rose, jasmine, and creepers clinging to the pillars supporting the veranda.

The proprietor, who had espied my approach, issued forth with a section of sable attendants in his rear, and gave me a hearty welcome. The house was larger and better than the residences even of the richest planters, though it was in need of some little repair, and had been built perhaps fifty years ago, in the old Irish fashion, who

built well, ate well, drank well, and, finally, paid very well. The view from the belvedere was one of the most striking of its kind in the world. If an English agriculturist could see six thousand acres of the finest land in one field, unbroken by hedge or boundary, and covered with the most magnificent crops of tasselling Indian corn and sprouting sugar-cane, as level as a billiard-table, he would surely doubt his senses. But here is literally such a sight. Six thousand acres, better tilled than the finest patch in all the Lothians, green as Meath pastures, which can be cultivated for a hundred years to come without requiring manure, of depth practically unlimited, and yielding an annual profit on what is sold off it of at least twenty pounds an acre at the old prices and usual yield of sugar. Rising up in the midst of the verdure are the white lines of the negro cottages and the plantation offices and sugar-houses, which look like large public edifices in the distance. And who is the lord of all this fair domain? The proprietor of Houmas and Orange grove is a man, a self-made one, who has attained his apogee on the bright side of half a century, after twenty-five years of successful business.

When my eyes "uncurtained the early morning," I might have imagined myself in the magic garden of Cherry and Fair Star, so incessant and multifarious were the carols of the birds, which were the only happy colored people I saw in my Southern tour, notwithstanding the assurances of the many ingenious and candid gentlemen who attempted to prove to me that the palm of terrestrial felicity must be awarded to their negroes. As I stepped through my window upon the veranda, a sharp chirp called my attention to a mocking-bird perched upon a rose-bush beneath, whom my presence seemed to annoy to such a degree that I retreated behind my curtain, whence I observed her flight to a nest, cunningly hid in a creeping rose trailed around

a neighboring column of the house, where she imparted a breakfast of spiders and grasshoppers to her gaping and clamorous offspring. While I was admiring the motherly grace of this melodious fly-catcher, a servant brought coffee, and announced that the horses were ready, and that I might have a three hours ride before breakfast.

If I regretted the absence of the English agriculturist when I beheld the six thousand acres of cane and sixteen hundred of maize unfolded from the belvedere the day previous, I longed for his presence still more when I saw those evidences of luxuriant fertility attained without the use of phosphates or guano. The rich Mississippi bottoms need no manure; a rotation of maize with cane affords them the necessary recuperative action. The cane of last year's plant is left in stubble, and renews its growth this spring under the title of *ratoons*. When the maize is in tassel, cow-peas are dropped between the rows, and when the lordly stalk, of which I measured many twelve or even fifteen feet in height, bearing three and sometimes four ears, is topped to admit the ripening sun, the pea-vine twines itself around the trunk with a profusion of leaf and tendril that supplies the planter with the most desirable fodder for his mules in "rolling-time," which is their season of trial. Besides this, the corn-blades are culled and cured. These are the best meals of the Southern race-horse, and constitute nutritious hay without dust. . . .

As we ride through the wagon-roads,—of which there are not less than thirty miles in this confederation of four plantations held together by the purse and the life of our host,—the unwavering exactitude of the rows of cane, which run without deviation at right angles with the river down to the cane-brake, two miles off, proves that the negro would be a formidable rival in a ploughing-match. The cane has been "laid by;" that is, it requires no more

labor, and will soon "lap," or close up, though the rows are seven feet apart. It feathers like a palm top: a stalk which was cut measured six feet, although from the ridges it was but waist-high. On dissecting it near the root we find five nascent joints not a quarter of an inch apart. In a few weeks more these will shoot up like a spy-glass pulled out to its focus. . . .

In the rear of this great plantation there are eighteen thousand additional acres of cane-brake which are being slowly reclaimed. . . . We extended our ride into this jungle, on the borders of which, in the unfinished clearing, I saw plantations of "negro corn," the sable cultivators of which seem to have disregarded the symmetry practised in the fields of their master, who allows them from Saturday noon until Monday's cockerow for the care of their private interests. . . .

Corn, chicken, and eggs are, from time immemorial, the perquisites of the negro, who has the monopoly of the two last-named articles in all well-ordered Louisiana plantations. Indeed, the white man cannot compete with them in raising poultry, and our host was evidently delighted when one of his negroes, who had brought a dozen Muscovy ducks to the mansion, refused to sell them to him except for cash. "But, Louis, won't you trust me? Am I not good for three dollars?" "Good enough, massa; but dis nigger want de money to buy flour and coffee for him young family. Folks at Donaldsonville will trust massa,—won't trust nigger." The money was paid, and, as the negro left us, his master observed, with a sly, humorous twinkle, "That fellow sold forty dollars' worth of corn last year, and all of them feed their chickens with my corn, and sell their own."

AMONG FLORIDA ALLIGATORS

S. C. CLARKE.

[To the several stories of hunting life which we have introduced into these pages we may add one description of the large game of the streams and lakes of Florida, the bone-clad alligator. With it is given a sketch of the Everglade region which may be of interest.]

HAVING organized an expedition to the great Lake Okechobee, some thirty miles due west from the Indian River Inlet, we hired a wagon and pair of mules to carry our tents and necessary baggage, but, no other animals being attainable, only those of us who were fit for a tramp of nearly a hundred miles could go. Colonel Vincent, Macleod and Herbert of the "Victoria," Captain Morris, Roberts, and myself, with the two pilots, Pecetti and Weldon, as guides, and Tom and a negro whom we picked up at Capron for cooks,—ten men in all, well-armed,—we were strong enough to insure respect from any roving party of Seminoles who might have been tempted to rob a weaker party. There are at this time, it is supposed, two or three hundred of these Indians in the region between Lake Okechobee and the Keys, descendants of a few Seminoles who concealed themselves in these inaccessible fastnesses when the greater part of their nation was sent West in 1842. They plant some corn on the islands of the Everglades, but live principally by the chase. Hitherto they have not been hostile to the whites, but as they increase in numbers faster than the white settlers, it is not impossible that they may reoccupy Southern Florida sooner or later, it being, in fact, a region suited only to the roving hunter. . . .

The first day we made about twenty miles through a

forest of yellow pine, such as stretches along the Southern coast from Virginia to Alabama, the trees standing thirty or forty feet apart, with little underbrush. Here and there we came upon a hummock of good soil, covered with the live-oak, magnolia, and cabbage-palm, all interlaced with vines and creepers, so as to form an almost impassable jungle. Now the road would lead into a wide savanna or meadow, waving with grass and browsed by herds of wild cattle and deer. In these meadows were set bright, mirror-like lakes, the abodes of water-fowl and wading birds, black bass, and the grim alligator, which in these solitudes, not being impressed with the fear of man, will hardly trouble himself to move out of the way. March in this region corresponding to May in the Middle States, the birds were in full spring song in every thicket,—the cardinal, the nonpareil, the mocking-bird, and our old familiar robin, whose cheerful note greets the traveller all over North America. Up and down the great pine trunks ran the red and gray squirrels, the little brown hare scudded through the palmetto scrub, and the turkey-buzzards floated above our heads in long easy circles.

So we fared on our way till about four P.M., when we made our camp on a clear branch or creek which issued from a lake near by, and while some of the party went to look for a deer, Captain Herbert and I took our rods and went up the creek towards the lake. Casting our spoons into a deep hole, we soon took a mess of bass and pike, which were very abundant and eager to be caught, when, as we were preparing to return to camp, we suddenly saw an alligator about eight feet long quietly stealing towards us. I seized a young pine-tree about as thick as my arm, and made for him. Not at all alarmed, the beast opened his jaws and advanced, hissing loudly. I brought down my club with full force upon his head, but it seemed to produce

no impression; he still advanced as I retreated battering his skull.

"What is that brute's head made of?" inquired Herbert, as he came to my assistance with another club; and between us we managed to stun the hard-lived reptile, and left him on the ground.

The hunters brought in a young buck and two turkeys, so that we had a plentiful supper after our tramp. . . .

About two o'clock that night we were disturbed by the mules, which had been staked out to graze hard by, and which retreated towards the camp to the end of their ropes, snorting with terror. The dogs rushed to the scene of disturbance, and appeared to have a fight with some animal which escaped in the woods. Our guides thought it was a panther, and at daylight they started, with Morris and myself and all the dogs, to hunt for it. The hounds soon hit the trail, which we followed into a cypress swamp about half a mile from the camp, in the midst of which they started a large panther, which, being hotly pressed by the hounds, treed in a big live-oak on the farther side of the swamp. When we came up we plainly saw the beast lying out on a branch which stretched horizontally from the trunk about twenty-five feet from the ground.

"Now," said Pecetti, "you two fire first, and if you don't kill, Weldon and I will be ready. Aim at the heart."

Morris and I fired, and the panther sprang from the tree among the dogs, which all piled on him at once. There was a confused mass of fur rolling on the ground, snarling, and snapping, for half a minute; then the panther broke loose, and was making off, when Weldon put half a dozen buckshot in his head, and he rolled over and over, so nearly dead that when the dogs mounted him again he could do no mischief. He had badly cut both the deer-hounds, however, which had been the first to seize him: Weldon's fox-

hounds, having more experience with this sort of game, had kept clear of his claws. It was a fine male, measuring eight feet from the nose to the tip of the tail, and we took the skin for a trophy. The tenacity of life in these large cats is very great. One of our balls had penetrated the chest, and the other had broken the fore leg, but he was still able to shake off the dogs, and would probably have escaped but for Weldon's shot. . . .

The next morning, March 13, we breakfasted upon a couple of gophers or land-tortoises which the men had found the day before in the pine-woods. These creatures are about eighteen inches long, and weigh twelve or fifteen pounds. A stew of the gopher and the terminal buds of the cabbage-palm is a favorite Florida dish. About noon we came suddenly upon the shore of the great lake Okechobee, which extends away to the west and south as far as the eye can reach: in fact, the shores are so low as to be invisible at any distance. This is by far the largest sheet of water in the State, being about forty miles long and thirty wide, but it is not deep. It contains on the western side several islands, which are occupied by the Seminoles. To the south and east of this lake are the Everglades, or Grassy Lakes, a region where land and water are mingled,—rivers, lakes, dry islands, and wet marshes all jumbled together in confusion, and extending over many hundred square miles, the chosen abode of the alligator, the gar-fish, the snapping-turtle, the moccasin snake, and other hideous and ferocious creatures more or less mythical, and recalling those earlier periods in the earth's history when the great monsters, the Ichthyosauri and the Plesiosauri, wallowed and crawled over the continents.

We made our camp in a grove near the lake, almost on the spot where Taylor fought his battle in 1838. As soon

as this was done the pilots went in search of a tree to make canoes. They found not far off a large cypress which served, and by the next night they had completed two canoes, each about twelve feet long and eighteen inches wide, suitable for navigating the lake and able to carry four men each. In the mean time we had commenced hostilities against the alligators, which were here very large, bold, and numerous. They lay basking in the sun upon the beach in front of our camp, some of them fifteen feet long, and it became necessary to drive them away, lest they should devour our dogs, or even our mules, for some of these monsters looked able to do it. We opened fire upon them with repeating rifles, and if any Indians were within hearing they must have supposed that General Taylor had come back again, such was the rapidity of our fusillade. The brain of the alligator is small, and developed chiefly in the region of destructiveness; but after a dozen were killed and many more wounded, it seemed to dawn upon their perceptions that this part of the lake was unsafe, and they gradually took themselves away. I disapprove of killing animals for mere sport, and destroy not deliberately except when I wish to use them for food; but the alligator is the enemy of all living creatures, the tyrant of the waters, and the death of one saves the lives of hundreds of other animals. So blaze away at the 'gators, O ye Florida tourists!—you will not kill many of them, anyway: their shells are too thick,—but spare the pelicans, who are a harmless race of fisherfolk, like ourselves.

There were great numbers of large turtles in the lake, *Chelonura* and *Trionyx*, from two to three feet long; garfish also, almost as big as the alligators. These mailed warriors, like the knights of old, exercise their prowess chiefly upon the defenceless multitudes of the fresh waters,

but I have heard of half a large alligator being found in the stomach of a shark at a river mouth. In spite of all these destroyers, the lake swarmed with fish. Pecetti could generally get enough black bass, pike, or perch at one or two casts of his net to feed our whole party if at any time it happened that they would not bite at the hook.

A curious feature of the lake and river scenery is the floating island. This is principally formed of the water-lettuce, or *Pistia*, an aquatic plant with long roots which descend to the bottom. These beds of *Pistia* become matted together with grass and weeds, so as to be thick enough to bear the weight of small animals, and even sometimes of man. In strong winds these islands break loose from their anchorage and float away for miles, till they bring up in some quiet bay, where the plants again take root. Lake Okechobee contains many of these floating meadows, which are a great resort for ducks and water-fowl. In fact, one would think that all the ducks, divers, herons, curlews, ibises, cranes, and waders generally had assembled here in mass-meeting. Among them are those rare and beautiful species, the scarlet ibis, roseate spoon-bill, and black-necked stilt. The ducks, being birds of passage, spending their summers up North, are acquainted with men and their arts, and are comparatively shy, but the native birds are very tame and can easily be approached.

I was awakened the next morning at sunrise by sounds from the woods as of a gang of ship-carpenters or calkers at work. It was the great ivory-billed woodpecker (*Picus principalis*) tearing off the bark and probing the dead trees for insects and grubs, and making a noise which could plainly be heard half a mile in the still morning air. Another sound of a different character now made itself

heard from the swamps. It was something like the bellowing of bulls, and proceeded from the old male alligators calling to their mates. This indicates the coming of spring, the breeding-season of these creatures. William Bartram, who travelled in East Florida a hundred years ago, gives a thrilling account of the terrible combats which he witnessed in the St. John's River between these rival champions, who did not hesitate to attack him in his boat.

The next day, March 15, being in want of meat, Colonel Vincent, Dr. Macleod, Morris, and I started for a hunt, taking Pecetti for guide, since nothing is easier than to get lost in this wilderness. We kept up the lake shore to the north on the sandy beach, towards the mouth of the Kissimmee River, which here enters the lake. This is a deep and rapid stream, which drains the great wet prairies to the north, and in the rainy season must carry a large volume of water. Like the lake, it has great patches of water-lettuce, which in some places almost bridge the channel. Much of its course is through swamps, though in some places the pine barrens and live-oak hummocks approach its banks. It contains immense quantities of fish, —pike, bass, and perch.

In the first hummock which we reached the colonel shot a buck, and I got two young turkeys from a flock. As we emerged from this hummock the guide spied a herd of wild cattle feeding on the prairie about half a mile off, and by his direction we crept through the scrub as far as it afforded cover, and then trusted to the high grass for concealment till we got within a hundred yards of the herd, which consisted of about twenty cows and calves, with a couple of bulls. The doctor and colonel fired together and brought down a heifer. A big bull immediately charged towards the smoke and report of the guns, for he could not see us. On he came, head down and tail erect, bellow-

ing with rage,—a magnificent animal of brindled color, with an immensely heavy neck and shoulder, like a bison, but without the mane. When within fifty yards I fired at his head: the ball struck him full in the forehead and staggered him, but he shook his head and kept straight for us. I gave him another shot, which struck him in the chest and turned him, when Pecetti gave him sixteen buck-shot in the shoulder from his big double-barrel, which brought him down, dying bravely in defence of his family.

“His carcass is too old and tough to be of any good,” said the guide, “but I’ll take off his hide: the heifer will give us meat enough.”

While he was butchering, Morris returned to the camp and sent out Tom with the wagon to bring in the beef and venison. It was not long before a flock of turkey-buzzards appeared in sight and floated in circles above our heads, waiting for our departure to begin their feast. It was formerly the opinion of naturalists that these birds were guided by scent in the discovery of the dead animals upon which they feed, but later investigations show that they are led by their acute vision; and my own experience convinces me that this is the fact. As we were returning to camp through the hummock, Pecetti killed a large rattlesnake: it was over five feet long, and as thick as the calf of a man’s leg. . . .

On the morning of March 20, Captain Herbert, Pecetti and I went on a fishing excursion up the lake in a canoe. A few casts of the net near the shore procured a supply of small fish of the mullet species for bait, and we paddled up near to the inlet of the Kissimmee. Here we found the alligators and gars too numerous, they having collected probably to prey upon the fish which there enter the lake. In a quiet bay near the fringe of *Pistia* and water-lilies, where the water was five or six feet deep, we trolled with a spoon

for black bass, and took some of very large size,—eight, ten and twelve pounds. . . .

What adds much to the interest of fishing in strange waters is the uncertainty of the sport and the variety of species; and in this lake we could not tell whether the next offer would be from a peaceful perch, a bounding bass, a piratical pike, or a gigantic gar. I put a chub, or a fish resembling it, eight or nine inches long upon a gang of large hooks, and cast it astern with a hand-line. Presently I saw a great roll towards it from out the weeds, and my line stopped short. I had something very heavy, which, however, played in the sluggish fashion of the pike family, and in ten minutes, without much resistance, I had it alongside the canoe, and it was gaffed by Pecetti. It was a huge pike, four feet four inches long, and weighed, when we got to camp, thirty-four pounds. Pecetti called it the striped pike, and said he had seen them six feet long in some of the lakes: perhaps *Esox vittatus* (Rafinesque) of the Mississippi Basin.

By this time the gars had collected about us in such numbers that the other fish were driven away: we found it impossible to get a hook into their bony jaws or bills, and only succeeded in capturing one of small size by slipping a noose over its head as it followed the bait. This gar-fish is useless as food, but we wanted a few specimens for Dr. White, it being in demand for museums, particularly in foreign countries, as it belongs to a species exclusively American, and represents an order of fishes (the ganoids) of which few families at present exist. This one, *Lepidosteus*, has a wide range in America, being found from Florida to Wisconsin. Another American ganoid is *Amia calva*, the dog-fish or bow-fin, which is very numerous in Western rivers. Both are voracious, but unfit for food. They are described by Agassiz as being of an old-fashioned

type, such as were common in the earlier geologic periods, and this is one among many proofs that North America is the oldest of the continents.

Morris, Vincent, and the other hunters brought in to-day a large supply of game,—deer, turkeys, and ducks,—but sustained the loss of one of Morris's deer-hounds, which they supposed to have been taken by an alligator while swimming a lake in pursuit of a deer. They were some miles south of the camp when this occurred. They did not see the alligator, but the dog suddenly disappeared, and was not to be found after a long search. Morris felt so much disgusted by the loss of this valuable dog that he wished to return to the yacht and go down towards the Keys. So we started the next morning, and arrived at the inlet on the 23d. The weather had been delightful, as is usually the case in Florida in winter, but the day we arrived at the inlet we encountered the beginning of the equinoctial storm, which lasted two days and was very violent.

IN THE MAMMOTH CAVE.

THÉRÈSE YELVERTON.

[Among the many marvels of nature in the United States the Mammoth Cave holds a prominent position, and we feel it incumbent on us to accompany some of our company of travellers into its depths. The "Teresina in America" of Thérèse Yelverton (Viscountess Avonmore) affords us the opportunity, of which we avail ourselves in the following selection.]

WE arrived at the Mammoth Cave on one of those heavenly days which earthly words fail to depict. It was the second week in November, the "Indian summer,"

the most charming season in America. If anything were necessary to convince me that a future beatitude is no fiction, it would be this foretaste of bliss in such days as these, when the whole being—mind and body—seems lapped in a state of peace and beatitude combined. Anxieties and worldly cares seem to float away into the dim distance; our love is free from feverish excitement, and hate has lost its gall and sting. The golden light which floats around mellows our soul to repose. There is that exhilarating, yet balmy nourishment in the atmosphere which lifts the weary spirit from its damp and earthly coil, and makes it glad, and light, and gleesome. The heavy "heart bowed down by weight of woe" suddenly imbibes some of the joyous elasticity which fills the insect tribe,—the bees and grasshoppers, the golden fly, glittering and humming in pure ecstasies, and the merry little beetles revelling in one continuous contra-dance. Rarely, indeed, can we overcharged human beings feel as blithesome as the insect world; we seek to taste the apples of delight which turn to ashes in our mouth, and neglect to sip with them the nectar in the breeze. What can we do? these breezes come so seldom. The insect sparkles to-day in the sunshine and to-morrow it dies. We of the superior race have to live and labor through sunshine and shade, and can only catch these rosy minutes as they fly.

Some of these halcyon moments we enjoyed on that fortunate day we arrived at the Mammoth Cave, Kentucky. The earth was covered with its autumn carpet of dry dark leaves,—brown and glossy on one side, deep violet on the other,—and crinkling and crushing beneath our tread, they kept up a staccato treble to the dulcet sighing of the wind through the yellow leaves still lingering on the trees. A delicious concert of sweet sounds, and one that Mozart and Mendelssohn must have studied well and care-

fully. The atmosphere was bright and clear as under a summer sun, but without the heat; the air as fine and bracing as winter, but without the cold. We lost sight entirely of the two great tormentors, heat and cold, and for the few days of our stay forgot their very existence.

I have heard of persons feeling, under the effect of laughter, as light and buoyant as if floating in ambient air. The atmosphere during their "Indian summer" must, doubtless, be strongly impregnated with oxygen, for we experienced a similar sensation; which was probably deepened by the fact of our having come from Louisville, where those hotel stairs had seemed a perfect toil to us.

The country around the caves, for eight or ten miles, was a series of deep ravines, studded with projecting cliffs and rocks, and covered with oak—principally the English oak—and another gigantic species, with leaves from a quarter to half a yard long, but of the same form as the ordinary oak-leaf. Up and down the ravines we scrambled and roamed, as happy as goats or wild chamois. These ravines, or glens, have no doubt been the beds of some ancient river, now, perhaps, flowing through the bowels of the earth; for this part of the country is intersected by underground rivers, a stream often suddenly appearing, which, after flowing on for a few miles, plunges rapidly into the earth and is lost to sight.

An anecdote is told of two millers who had their mills on two different rivers, thirty miles apart. There had been a long drought, and neither mill had been working; but one day miller No. 1 heard his wheel going round at a tremendous pace, and going to examine it perceived a quantity of water, although there had not been a drop of rain for some time. He went over to communicate his good luck to his neighbor.

"Oh!" exclaimed miller No. 2, "you're gettin' my water

unbeknownst, for a cloud burst over us the other night and nearly drowned us all."

It was evident the millers were working the same stream, which ran for thirty miles underground, similar to the lakes in Florida, called sinks (for Americans call everything by gross-sounding names), which suddenly disappear, leaving all the fish stranded. Sometimes the water returns, sometimes not. . . .

Independent of the caves, the scenery around, to a lover of nature, is well worthy of a visit, and for a summer resort is unsurpassed; shady, romantic walks through the woods; a delicious air breathed from the gigantic mouth of the cavern, whence, in the hot months, it blows cool and refreshing; in the cold ones soft and warm; the actual temperature of the cave never varying. The sensations of heat and cold are produced by comparison with the outer air.

It occurred to a medical man some years ago that the *uniform atmosphere* of this cave might be a specific for consumption.

Possessed with this theory, the doctor had a dozen small houses constructed in the cavern, about a mile or two from its mouth, and to these he conveyed his patients. From the appearance of these places of abode, the only wonder is that the poor invalids did not expire after twenty-four hours of residence in them. They, however, contrived to exist there about three months, most of them being carried out *in extremis*. The houses consisted of a single room, built of the rough stone of the cavern,—which, in this part, bears all the appearance of a stone-quarry,—and without one particle of comfort beyond a boarded floor, the small dwelling being constructed entirely on the model of a lock-up, or "stone-jug." The cells of a modern prison are quite palatial in comparison with them. The darkness is

such as might be felt; and it is impossible to realize what darkness actually is until experienced in some place where a ray of sunlight has never penetrated.

From the mouth of the cavern to that part where the doctor's houses were built was a continual, though gradual, descent, and at that spot there was a solid roof of a hundred and fifty feet of earth. The houses—or rather detached stone boxes—were so small that without vitiating the air only one person could remain in them at one time; so that, besides the darkness,—in case of any accident to their lamps,—these poor creatures must have endured utter solitude. Their food was brought from the hotel, two or three miles away, on the hill, and consequently must have been cold and comfortless. They were kept prisoners within their narrow cells, for the rough rocks and stones everywhere abounding rendered a promenade for invalids quite impracticable. The deprivation of sunlight, fresh air, and all the beauties of the earth must have been the direst punishment imaginable. No wonder these poor creatures were carried out one by one to die.

The last one having become so weak that it was deemed unsafe to move him, his friends resolved to stay with him in the cavern till the last. What transpired is now beyond investigation. Whether some effect of light, which in this cavern has a most mysterious and awful appearance, or whether the death-bed was one of terrors, owing to some imp of mischief having laid a plan to “scare” them, as they say in this country, is not known; but they rushed terror-stricken from the cave, and on reaching the hotel fell down insensible. Subsequently they declared they had seen spirits carrying away their friend. Mustering a strong force, the people from *terra firma*, with the guides and plenty of torches, sallied down to the lower and supposed infernal regions. The spirits, however, had fled,

leaving nothing but the stiffening corpse of the poor consumptive. This ended all hope of the cavern as a cure for consumption.

The Mammoth Cave is perhaps the most extensively explored cavern known. It extends for nine continuous miles, so that it would be possible to walk fifty miles in and out by different roads. The cavern consists of various large chambers and lofty domes, averaging from twenty to one hundred feet in height. Some of the chambers exactly resemble the tombs of the kings of Egypt, and the narrow tortuous defiles through the rocks are also very like the roads into the Pyramids. Most of these chambers are merely natural excavations in the solid rock. One of the white-domed ceilings is covered with a thick scroll-pattern traced in black, and consists entirely of bats, which take up their winter quarters in these caverns, and fare better in them apparently than the consumptives. It is curious how these sightless creatures, from various parts of the country, find out the caves, so impervious to light and cold, and where, from the noise they make, they seem to have a merry time of it. Not so, however, the visitors passing through this part of the cave; for the bats are apt to fly right in one's face, or stick against one's clothes, and bite furiously at any attempt to dislodge them.

Still farther on there is a vast vault, upward of eighty feet high, formed of gypsum with some sort of crystals embedded in it. When you sit and gaze on it for some time, by the dim light of the lamps, the vault seems to recede into azure space. A bright sparkling veil hangs over it like the milky-way, seen dimly between the shelving rocks, which bulge out in round soft layers, of a whitish-gray cast, and look exactly like petrified clouds. By a judicious movement of the light of the lamps a most beautiful phenomenon of cloud-scenery is effected, and by

their gradual extinction a Stygian darkness seems to wrap all in perfect horror. This, the "Star Chamber," is one of the finest effects in the Mammoth Cave, and it might be enhanced to the wildest magnificence by an artistic arrangement of variously colored lights. The cave would be a fine place in which to read Dante's *Inferno*.

Here and there through the cave there are immense pits or chasms, only some few yards in circumference, but from two to three hundred feet in depth. A piece of paper saturated in oil is thrown down and displays the fearful gulf, the bottom of which appears to have the same formation of rock and clay as the top. Sometimes we ascended ten or twenty feet by ladders and occasionally descended. We traversed about a mile of passage where the ceiling, six feet high, was as smooth and white as plaster could have made it. It was literally covered with the names of former visitors. In some places there were hundreds of cards on the floor, left by guests,—so it is not only English people who have a mania for inscribing their names. Indeed, as to that, it is common to most nations, for I had a secretary named Van Kenkle, who wrote his name upon every article belonging to me.

For eight or nine miles we continued to traverse passages and chambers, sometimes over rough pieces of rock, sometimes through the thick dust of ages, sometimes through the tortuous gorges,—mere slits between the rocks through which we had to creep,—sometimes coming upon a well or spring of sweet water. At about three or four miles from the mouth we came to the chamber called "The Church," from its resemblance to the ancient cathedral vault, frequently to be seen on the European continent under churches or monasteries, and called the crypt.

This church of the Mammoth Cave is a singular phenomenon. The roof, which is not lofty, is supported by a

number of pillars, in many places forming Gothic arches, and running at somewhat regular distances, dividing the church into aisles. These columns are actually enormous stalactites, and the fresco of petrified water upon them has all the appearance of the most rich and elaborate carving. In some places the pillars of stone have not quite reached the ground, and remain suspended from the roof. Other, and smaller condensed stalactites resembled the drooping rosettes which unite the spring of Gothic arches. In one portion of the church is an enormous stone, carved out exactly like the bishop's chair, or throne, usually seen on the high altar. The altar itself is very like those primitive stone edifices sculptured by the early Christians, when driven to celebrate their worship in the catacombs of Rome.

This chamber is a marvellous freak of nature imitating art, for the hand of man has never touched it or worked it into shape; yet if any one were transported here unconsciously, he would, on looking round, imagine himself in the chancel crypt of some old cathedral of the ninth or tenth century. Some romantic lovers, evidently influenced by this idea, had actually, a few weeks before our visit, arrived at the cave, accompanied by their friends and the clergyman, and caused the marriage ceremony to be performed in that very church. It was a whimsical idea, and must have been a cold, comfortless, clammy affair; but the feelings and sentiment about weddings totally differ in America from our European notions on the subject,—rarely is it a joyous merry-making, rather the reverse, as I have mentioned in a former chapter.

A few miles farther on, we came to the great natural marvel, the subterranean river, with its buried water and eyeless fish, its beautiful parterres of stone flowers and shrubs, like a garden covered with morning hoar-frost.

On this dismal river we were launched in a little skiff, not the most seaworthy in the world,—and I must confess to having experienced a feeling of dread of being upset on that mysterious stream, whose outlet might be, for all we know, in a region we did not care to visit, or even to contemplate the possibility of visiting. The echo had a thrill of awe that made one's flesh creep and hair stand on end. If one called spirits there from the vasty deep, and they did not come, yet they certainly answered from the dark shadows of the rocks falling around the lurid glare of the torches,—the only light on the river of Erebus. It was quite easy to believe there were myriads of spirits flitting around, and stretching out their weird arms to carry us down to bottomless Hades.

There is another very interesting cave, which is not so frequently visited by travellers, who when they have seen *the big thing*, are only anxious to rush away again. It is not so extensive as the Mammoth, but infinitely more beautiful and more inaccessible, the descent having to be accomplished by ladders; but once down, it is a fairy-land, a continuous scene of rapturous enchantment. The stalactites simulate the most exquisite parterre of flowers, the most magnificent forest of crystallized trees, the most wondrous marble carving, even to that perfection of art which shrouds the figure in transparent drapery, like “the statue of the Dead Christ” at Naples; nor was Apollo's charm unknown there. Our guide tapped upon these magic crystals, and produced the sweetest harmony ear ever heard, or at least it sounded so.

The walls of the chambers and passages were encrusted with the stalactite flowers. They could be broken off their stems, and as so few visitors ventured down, the guide allowed me to take one. One chamber was absolutely curtained with this marvellous formation of petrified water,

and when the guide held the light behind the scene, it produced the effect of being draped in the purest amber. These drooping curtains, some fifty feet in height, emitted the most musical tones when struck. If the physician had brought his patients to these fairy bowers, he might, I think, have succeeded in sending them home quite cured, but I believe the cave had not been discovered then.

With a brilliant light the spot was perfectly lovely, and the atmosphere was that of constant, unchanged temperature, which puts the human lungs in a state of beatitude. I should not in the least object to live in that paradise of crystal flowers and adamantine forms, the most beautiful that the imagination of man has ever conceived to be curtained in living amber, and pillowed—well, I must admit that—in dust; but it was such *clean* dust. . . . The texture of these stalactites, when examined by daylight, resembles alabaster, thus the leaves, flowers, sprigs, are perfectly beautiful. Nor are these caves without their incidents of life's drama. The grave and the gay have been enacted here as elsewhere. The episode of the physician and his patients was sad enough, but a more terrible tragedy resulted from a wager.

The guides are particular on entering the caves with a large party to beg them to keep together, as it would be impossible for a person to find his own way out of the labyrinth of passages, chambers, etc. Two gentlemen of a party made a bet that they would accomplish the feat, and, taking their opportunity, slipped away from their party, without the guides being aware of their absence, and it was not until late in the evening that the other party to the wager remarked that those two foolhardy fellows had not found their way out of the cavern. This coming to the ears of the guide, he exclaimed, "Then they are dead men!" Nevertheless they went in full force to

do everything that was possible to find them, but spent the night in vain searches. Sometimes they came upon their track in the soft dust, then lost it again.

On the following day the search was renewed by the guide who had escorted the party, and his description of the finding of one of the gentlemen was truly horrible: "It was the most tarnation cutting up job I ever had in my life," said the guide. "We are not much of cowards, we guides,—we get accustomed to awfulness down in the bowels of the earth; but when that *critter's* shrieks first came to my ear, I just shivered all over and my feet rooted to the ground,—not that I did not wish to save him, the poor devil, but I got an idea that that shriek came right straight from hell and no mistake, and I had no fancy to go there before I was sent for! Wall, when I had wiped my brow and taken a drink, I went on in the direction of the sound, for it came every now and again, the echoes making like fifty devils instead of one. I found him sooner than I expected; he was a sight to behold; he flew at me like a tiger; he clutched me, and pulled me, and wrestled with me, yelling and howling like a wild beast. I thought he would have torn me to pieces. I should not have known him again for the same gentleman. His eyes glared, his mouth was foaming, and his hair on end, his clothes all torn and covered with dust. He was a real raving maniac, and so he remained, as far as I know. The work I had to get him out of that cave! He would stand stock still and shake all over, then suddenly clutch at me again. I was the stronger man of the two, and he was weak from long fasting, or I never should have got him out. The doctor said he was fright-stricken."

And this was the case, as they thought, with the other poor fellow, who was not found for weeks, it having been conjectured that he had fallen down a hole. One of the

guides making some new exploration, discovered him sitting down, no sign of decomposition having taken place, and no sign of his having died of starvation, for a piece of biscuit was found in his pocket. He was supposed to have died of terror, the terrible darkness working upon the nervous system, and the hopelessness of penetrating it making the minutes appear hours. A guide who had once been lost there himself for some twenty hours, said he never could believe he had not been there for several days.

DOWN THE OHIO AND MISSISSIPPI.

THOMAS L. NICHOLS.

[“Forty Years of American Life,” by Dr. Thomas L. Nichols, is the source of the following selection, which gives a graphic and interesting picture of steamboat life on the great rivers of the West in the days before the war. It needs only one thing to complete the story, the race and the explosion, which was no uncommon incident at that period, but an example of which, fortunately for our author, was not among his experiences.]

WE embarked on a little steamboat which drew twelve inches of water, and whose single wide paddle-wheel was at the stern, and extended the whole width of the hull. A succession of dams made the river navigable at that season of low water, and at each dam we were let down by a lock to a lower level. At the high stage of water dams and locks are all buried deep beneath the surface, and larger steamboats go careering over them.

What I best remember, in crossing the Alleghanies and descending this river, were the beds of coal. It seemed to be everywhere just below the surface. We saw it along the

route, where the people dug the fuel for their fires out of a hole in the yard, ten feet from the door. Along the high perpendicular banks of the river there were strata of coal ten or twelve feet thick. Men were digging it down with picks and sliding it into flat-boats, which, when the river rose, would float down with the current to Cincinnati, Louisville, Memphis, and New Orleans. These frail boats—long boxes made of deal boards nailed together, and loaded nearly to the top—would many of them be lost. The swell of a passing steamboat, or a snag or a sawyer in the river, would sink them. They would ground on sand-bars. A sudden hurricane sometimes sinks a hundred of them. Perhaps a third of the whole number are lost, but the coal costs almost nothing—three halfpence a bushel—and brings a price proportional to the distance which it floats in safety.

At Pittsburg, a city of coal and iron, smoky and grimy as Newcastle or Birmingham, we took a larger boat, but still a small one, for Cincinnati. The Ohio was very low. We passed slowly down, getting pleasant glimpses of the towns upon its banks, and especially of the flourishing cities of Cincinnati and Louisville.

I was disappointed with the Ohio for a few hundred miles from its source, most unreasonable tourist that I was. I recall whatever I may have said to its disparagement. The Ohio, charming in all its course of a thousand miles, becomes grandly beautiful below Louisville for the lower half of its course. Were it but deep as well as broad and splendid in its great reaches, and graceful curves and picturesque banks, nothing would be wanting to its pleasing souvenirs. But I have tried its current at an unfortunate period,—the river at its lowest point. At its highest it would be fifty feet deeper,—a great torrent pouring onward towards the sea.

We were all of us in high spirits on the "Fort Wayne." The crew was firing up, and singing merrily below ; and in the cabin we were sitting round our good coal-fire, chatting, reading, and some playing poker, calculating the next morning but one to wake upon the Mississippi. So passed we down merrily, until, sunk upon a bar, we saw the wreck of the steamboat "Plymouth," which two nights before had been run into by another boat, which sunk her instantly, and her deck-passengers woke up under the waters of the Ohio. Twenty unfortunates were drowned ; and our passengers, accustomed to the river, spoke of it with perfect indifference, as a very common affair.

We passed this bar safely, touching bottom indeed, as we often did ; but in passing over the next we grounded firm and fast. The engines were worked at their greatest power, but in vain. Efforts were made all day to get the boat off, but without moving her, and older voyagers began to tell pleasant stories of boats lying for three weeks on a sand-bar, and getting out of provisions and wood. For us passengers there was but patience, but for captain and crew there was a hard night's work in a cold November rain. They went at it heartily, and when we woke up in the morning the steamboat was afloat, and as soon as she had got in a fresh supply of wood we went merrily down the Ohio again, putting off by a day our arrival at the Father of Waters. So we went, talking on morals and politics, reading the "Wandering Jew," and playing poker, until dinner came ; and just after dinner we came to another bar, on which we ran as before, giving our crew a second night of hardship and toil, and us a more thorough disgust of low-water navigation. We got off by morning as before, by great exertion and the steady use of effective machinery, the boat being hoisted over the bar inch by inch by the aid of great spars, blocks, and windlass.

There was still, but a short distance below this spot, the worst bar of all to pass. . . . Having been twice aground and lost nearly two days, our captain determined to take every precaution. He hired a flat-boat, into which were discharged many tons of whiskey and butter, and which was lashed alongside. A boat was sent down to sound the channel and lay buoys. This done, just as breakfast was ready, all the male passengers were summoned to go on board the flat-boat, fastened alongside, with the butter and whiskey, so as to lighten the steamer as much as possible, and when we were all aboard we started down. As luck would have it, the current carried the boat a few feet out of her proper course, and she stuck fast again. The wheels could not move her, and we jumped on board again to eat our breakfast, now grown cold from waiting.

This despatched, we went out on the promenade deck, and to our chagrin saw the "Louis Philippe," which left Louisville one day behind us, coming down, looking light and lofty, with a flat-boat alongside. She came down rapidly, and passed close by us, her passengers laughing in triumph at our predicament. The "Louis Philippe" had not got her length below us before she too stuck fast and swung round into a more difficult position, lying broadside upon the bar, with the strong current full against her. The laugh was now on our side, and the "Louis Philippe" gave rise to the more jokes, because her hurricane-deck was entirely covered with cabbages, with their stumps sticking up, giving her a droll appearance, while our hurricane-deck was filled with chicken-coops. It was time now to go to work in earnest. More freight was discharged into our lighter, and all the passengers, except the women and children, were sent on board her. We thickly covered the barrels of whiskey and kegs of butter, and the captain, to keep us off the steamer, cast us loose, and we

floated off with the current, and were safely blown ashore on the Kentucky side, about a mile below, leaving the two steamers above to get off as soon as they were able.

When our flat-boat touched the Kentucky bank of the river, her ninety passengers jumped joyfully ashore, and with noisy hilarity scattered along the beach. The morning was beautiful. The clear sunlight glittered upon the river and lighted up the forest with golden radiance. The sky was blue, and the air cool and bracing. The land was high, well wooded, and fertile. Seeing a substantial-looking double log house a short distance from the river, about a dozen of us went up to warm our fingers at its fire. . . .

In a few moments our lucky boat swung round and came down for us, leaving the less fortunate "Louis Philippe" to get off as she could, and her passengers to learn not to halloo before they got out of the wood. And now—now, by the first light of the morning for this grand, this terrible Mississippi!

It was a misty moonlight night when we came to the confluence of the Ohio with the Mississippi. We had come down a tedious, and in some degree a perilous, course of one thousand miles; we had still a thousand miles to go before arriving at New Orleans, which is the next stage of our Southern journey.

The Mississippi and the Ohio come together at an acute angle, and their waters flow down in unmingled currents, differing in color, for a long distance. Even at night we could distinguish the line which divides them. The Ohio water is filled with fine sand and loam; the Mississippi is discolored with clay besides, and the water looks like a tub of soapsuds after a hard day's washing.

Whoever looks upon the map with a utilitarian eye sees at the confluence of these great rivers a favorable point

for a great city. A few years since an English company took possession of or purchased this site, and, with a capital of nearly a million of pounds sterling, commenced operations. They lithographed plans of the city and views of the public buildings. There were domes, spires, and cupolas, hotels, warehouses, and lines of steamboats along both rivers. How fair, how magnificent it all looked on the India paper! You should see the result as I saw it in the misty miasma, by the pale moonlight. Cairo is a swamp, overflowed by every rise of either river. The large hotel, one of the two buildings erected, is slowly sinking beneath the surface. Piles will not stand up, and, however deep they are driven, sink still deeper. The present business of the place, consisting of selling supplies to steamboats, and transferring passengers from the down- to the up-river boats, is done on floating store-boats, made fast to the shore. Cairo has since been built into a considerable town by dyking out the rivers, and was an important naval and military point during the Civil War. . . .

This is my thirteenth day of steamboating,—the usual time across the Atlantic,—and I have four days more at least. You may well suppose that a hundred passengers are put to their trumps for amusement. The “Wandering Jew” did very well as long as it lasted. Some keep on reading novels, having laid in a stock or exchanged with other passengers, but cards are the resource of the majority. The centre-tables, as soon as breakfast is over, are occupied with parties playing poker or loo, and are covered with bank-notes and silver. Many who do not play look on to see the frolics of fortune. Several of these players are professional gamesters, and quite cool, as men who hope to win by chance or skill ought to be. Others, in their flushing cheeks and trembling hands and voices, show how the passion is fastening upon them. These are

driven by weariness and tempted by the smallness of the game to commence playing. The passion increases day by day, and so do the stakes, until, before reaching New Orleans, the verdant ones have lost all their money, and with it their self-respect and their confidence in the future. Depressed by shame, disheartened at being in a strange city without money, they are in a miserable condition, and ready to throw themselves away. They become dependent upon the blacklegs who have led them on, are instructed in their evil courses, made their tools and catspaws, and perhaps induced to enter upon courses of crime of a more dangerous character. All this comes of playing cards to kill time on the Mississippi.

While those who need the excitement of betting play at games of bluff and poker, some amuse themselves with whist, and old-fashioned fellows get into a corner and have a bout at old sledge; and now at eleven o'clock the great cabin of our boat presents a curious appearance. Playing around the tables, with noisy, joyous laughter, are half a dozen merry little boys and girls. These have all got well acquainted with each other, and seem to enjoy themselves thoroughly.

I can give you little idea of this portion of the Mississippi. The river is very low, and does not seem large enough to be the outlet of the thousand streams above; for the waters on which we float come not only from the melting snows of the Rocky Mountains, but there are mingled with them the bright springs of Western New York, a large part of Pennsylvania, part of Maryland, Virginia, North Carolina, and a large portion of the Western States. Yet, with all the waters of this vast area, our boat can sometimes scarcely keep the channel. Last night, running at her full speed, she went crashing into a snag, with a concussion and scraping which woke us all up, and

made the timid ones spring out of their berths. Our safety was in our going down-stream instead of up,—the difference of rubbing the back of a hedgehog the right and the wrong way. These snags are great trees which cave off and are washed down the current; the roots become embedded in the bottom; and the stem and branches, pointing down-stream, and half or wholly covered with water, form a terrible *steamboat de frise*, which tears an ascending steamboat to pieces, but generally allows those going with the current to pass over or through them with safety.

The river is full of islands, so that you often see but a small portion of its waters; it winds along in so many convolutions that you must steam a hundred miles often to make twenty in a straight line. Many of these bends may be avoided at high water by taking the cross cuts, called "running a *chute*," when the whole country for twenty miles on each side is submerged.

Usually, on one side or the other, there is a perpendicular bank of clay and loam some thirty feet high, and here and there are small plantations. The river gradually wears them off, carrying down whole acres in a season. From this bank the land descends back to the swamps which skirt nearly the whole length of the river. These, in very low water are comparatively dry, but as the river rises they fill up, and the whole country is like a great lake, filled with a dense growth of timber. These curving banks, the rude and solitary huts of the wood-cutters, the vast bars of sand, covered gradually with canebrake, and the range of impenetrable forest for hundreds of miles, comprise a vast gloomy landscape, which must be seen to be realized. . . .

While the scene is fresh in my memory let me describe to you my last morning upon the Mississippi. But why do

I speak thus of a scene which can never fade from my remembrance, but in all future years will glow the brightest picture which nature and civilization have daguerreotyped upon my heart?

I rose before the sun, while all the east was glowing with his refracted light. The steamboat had made excellent progress all night, not being obliged to stop by fog, and was only detained a short time by running plump into the mud on the river's bank; but she soon backed out of that scrape.

We had here, fifty miles above New Orleans, an almost tropical sunrise. The Mississippi, as if tired of its irregularities, flowed on an even current between its low banks, along which on each side are raised embankments of earth from four to ten feet in height,—the levee, which extends for hundreds of miles along the river, defending the plantations from being overflowed at high water.

As I gained the hurricane-deck the scene was enchanting, and, alas! I fear indescribable. On each side, as far as the eye could reach, were scattered the beautiful houses of the planters, flanked on each side by the huts of their negroes, with trees, shrubbery, and gardens. For miles away, up and down the river, extended the bright green fields of sugar-cane, looking more like great fields of Indian corn than any crop to which a Northern eye is familiar, but surpassing that in vividness of the tints and density of growth, the cane growing ten feet high, and the leaves at the top covering the whole surface. Back of these immense fields of bright green were seen the darker shades of the cypress swamp, and, to give the most picturesque effect to the landscape, on every side, in the midst of each great plantation, rose the tall white towers of the sugar-mills, throwing up graceful columns of smoke and clouds of steam. The sugar-making process was in full operation.

After the wild desolation of the Mississippi, for more than half its course below the Ohio, you will not wonder that I gazed upon this scene of wealth and beauty in a sort of ecstacy. Oh! how unlike our November in the far, bleak north was this scene of life in Louisiana! The earth seemed a paradise of fertility and loveliness. The sun rose and lighted up with a brighter radiance a landscape of which I had not imagined half its beauty.

The steamer stopped to wood, and I sprang on shore. Well, the air was as soft and delicious as our last days in June,—the gardens were filled with flowers; yes, bushels of roses were blooming for those who chose to pluck them; while oranges were turning their green to gold, and figs were ripening in the sun. It was a Creole plantation,—French the only language heard. A procession of carts, each drawn by a pair of mules, and driven by a fat and happy negro, who seemed to joke with every motion and laugh all over from head to foot, came from the sugar-house to get wood, of which an immense quantity was lying upon the banks of the river, saved from the vast mass of forest trees washed down at every freshet.

I cannot describe the appropriateness of everything on these plantations. These Creole planters look as if nature had formed them for good masters; in any other sphere they are out of their element,—here most decidedly at home. The negroes, male and female, seem made on purpose for their masters, and the mules were certainly made on purpose for the negroes. Any imaginable change would destroy this harmonious relation. Do they not all enjoy alike this paradise,—this scene of plenty and enchantment? The negroes work and are all the better for such beneficial exercise, as they would be all the worse without it. They have their feasts, their holidays,—more liberty than thousands of New York mechanics enjoy in their lifetimes, and

a freedom from care and anxiety which a poor white man never knows. I begin to think that Paradise is on the banks of the Mississippi, and that the nearest approach to the realization of the schemes of Fourier is on our Southern plantations.

FROM NEW ORLEANS TO RED RIVER.

FREDERICK LAW OL MSTED.

[We have given a descriptive sketch of steamboat travel down the Ohio and Mississippi in the first half of the century, in what we may almost call the days of the barbarians. It is here followed by a sketch of steamboating, from New Orleans to and up the Red River, in the ante-war period, in which will be found methods as unprogressive and people as uncivilized as in any period of modern travel. The getting off was a marvel of procrastination, worthy of the most primitive days of American travel.]

On a certain Saturday morning, when I had determined on the trip, I found that two boats, the "Swamp Fox" and the "St. Charles," were advertised to leave the same evening for the Red River. I went to the levee, and finding the "St. Charles" to be the better of the two, I asked her clerk if I could engage a state-room. There was just one state-room berth left unengaged; I was requested to place my name against its number on the passenger book; and did so, understanding that it was thus secured for me.

Having taken leave of my friends, I had my luggage brought down, and went on board at half-past three,—the boat being advertised to sail at four. Four o'clock passed, and freight was still being taken on,—a fire had been made in the furnace, and the boat's big bell was rung. I noticed that the "Swamp Fox" was also firing up, and that her bell

rang whenever ours did,—though she was not advertised to sail till five. At length, when five o'clock came, the clerk told me he thought, perhaps, they would not be able to get off at all that night,—there was so much freight still to come on board. Six o'clock arrived, and he felt certain that, if they did get off that night, it would not be till very late. At half-past six he said the captain had not come on board yet, and he was quite sure they would not be able to get off that night. I prepared to return to the hotel, and asked if they would leave in the morning. He thought not. He was confident they would not. He was positive they could not leave now before Monday,—Monday noon. Monday at twelve o'clock,—I might rely upon it.

Monday morning the *Picayune* stated, editorially, that the floating palace, the "St. Charles," would leave for Shreveport at five o'clock, and if anybody wanted to make a quick and luxurious trip up Red River with a jolly good soul, Captain Lickup was in command. It also stated, in another paragraph, that if any of its friends had any business up Red River, Captain Pitchup was a whole-souled veteran in that trade, and was going up with that remarkably low-draught favorite, the "Swamp Fox," to leave at four o'clock that evening. Both boats were also announced, in the advertising columns, to leave at four o'clock.

As the clerk had said noon, however, I thought there might have been a misprint in the newspaper announcements, and so went on board the "St. Charles" again before twelve. The clerk informed me that the newspaper was right,—they had finally concluded not to sail until four o'clock. Before four I returned again, and the boat again fired up, and rung her bell. So did the "Swamp Fox." Neither, however, was quite ready to leave at four o'clock. Not quite ready at five. Even at six—not yet quite ready.

At seven, the fires having burned out in the furnace, and the stevedores having gone away, leaving a quantity of freight yet on the dock, without advising this time with the clerk, I had my baggage re-transferred to the hotel.

A similar performance was repeated on Tuesday.

On Wednesday I found the berth I had engaged occupied by a very strong man, who was not very polite when I informed him that I believed there was some mistake,—that the berth he was using had been engaged to me. I went to the clerk, who said that he was sorry, but that, as I had not stayed on board that night, and had not paid for the berth, he had not been sure that I should go, and he had, therefore, given it to the gentleman who now had it in possession, and whom, he thought, it would not be best to try to reason out of it. He was very busy, he observed, because the boat was going to start at four o'clock; if I would now pay him the price of passage, he would do the best he could for me. When he had time to examine, he would probably put me in some other state-room, perhaps quite as good a one as that I had lost. Meanwhile, he kindly offered me the temporary use of his private state-room. I inquired if it was quite certain that the boat would get off at four; for I had been asked to dine with a friend at three o'clock. There was not the smallest doubt of it,—at four they would leave. They were all ready at that moment, and only waited till four because the agent had advertised that they would,—merely a technical point of honor.

But, by some error of calculation, I suppose, she didn't go at four. Nor at five. Nor at six.

At seven o'clock the "Swamp Fox" and the "St. Charles" were both discharging dense smoke from their chimneys, blowing steam, and ringing bells. It was obvious that

each was making every exertion to get off before the other. The captains of both boats stood at the break of the hurricane-deck, apparently waiting in great impatience for the mails to come on board.

The "St. Charles" was crowded with passengers, and her decks were piled high with freight. Bumboatmen, about the bows, were offering shells, and oranges, and bananas; and newsboys, and peddlers, and tract distributors were squeezing about with their wares among the passengers. I had confidence in their instinct; there had been no such numbers of them the previous evenings, and I made up my mind, although past seven o'clock, that the "St. Charles" would not let her fires go down again.

Among the peddlers there were two of cheap "literature," and among their yellow covers each had two or three copies of the cheap edition (pamphlet) of "Uncle Tom's Cabin." They did not cry it out as they did the other books they had, but held it forth among others, so that its title could be seen. One of them told me he carried it because gentlemen often inquired for it, and he sold a good many; at least three copies were sold to passengers on the boat. . . .

It was twenty minutes after seven when the captain observed,—scanning the levee in every direction to see if there was another cart or carriage coming towards us,—
"No use waiting any longer, I reckon: throw off, Mr. Heady." (The "Swamp Fox" did not leave, I afterwards heard, till the following Saturday.)

We backed out, winded round head up, and as we began to breast the current, a dozen of the negro boat-hands, standing on the freight piled up on the low forecastle, began to sing, waving hats and handkerchiefs, and shirts lashed to poles, towards the people who stood on the sterns of the steamboats at the levee.

After losing a few lines, I copied literally into my note book :

“ Ye see dem boat way dah ahead.

Chorus.—Oahoiohieu.

De San Charles is arter 'em, dey mus' go behine.

Oahoiohieu.

So stir up dah, my livelies, stir her up.

Oahoiohieu.

Day's burnin' not'n but fat and rosum.

Oahoiohieu.

Oh, we is gwine up de Red River, oh !

Oahoiohieu.

Oh, we mus' part from you dah asho'.

Oahoiohieu.

Gib my lub to Dinah, oh !

Oahoiohieu.” . . .

The wit introduced into these songs has, I suspect, been rather over-estimated.

As soon as the song was ended, I went into the cabin to remind the clerk to obtain a berth for me. I found two brilliant supper-tables reaching the whole length of the long cabin, and a file of men standing on each side of both of them, ready to take seats as soon as the signal was given.

The clerk was in his room, with two other men, and appeared to be more occupied than ever. His manner was, I thought, now rather cool, not to say rude; and he very distinctly informed me that every berth was occupied, and he didn't know where I was to sleep. He judged I was able to take care of myself; and if I was not, he was quite sure he had too much to do to give all his time to my surveillance. I then went to the commander, and told him that I thought myself entitled to a berth. I had paid for one, and should not have taken passage in the boat if it had not been promised me. I was not disposed to fight for it, particularly as the gentleman occupying the berth engaged to me was a deal bigger fellow than I, and also

carried a bigger knife, but I thought the clerk was accountable to me for a berth, and I begged that he would inform him so. He replied that the clerk probably knew his business; he had nothing to do with it; and walked away from me. I then addressed myself to a second clerk, or sub-officer of some denomination, who more good-naturedly informed me that half the company were in the same condition as myself, and I needn't be alarmed, cots would be provided for us.

As I saw that the supper-table was likely to be crowded, I asked if there would be a second table. "Yes, they'll keep on eating till they all get through." I walked the deck till I saw those who had been first seated at the table coming out; then, going in, I found the table still crowded, while many stood waiting to take seats as fast as any were vacated. I obtained one for myself at length, and had no sooner occupied it than two half-intoxicated and garrulous men took the adjoining stools.

It was near nine o'clock before the tables were cleared away, and immediately afterwards the waiters began to rig a framework for sleeping-cots in their place. These cots were simply canvas shelves, five feet and a half long, two wide, and less than two feet apart, perpendicularly. A waiter, whose good will I had purchased at the supper-table, gave me a hint to secure one of them for myself, as soon as they were erected, by putting my hat in it. I did so, and saw that others did the same. I chose a cot as near as possible to the midship door of the cabin, perceiving that there was not likely to be the best possible air, after all the passengers were laid up for the night in this compact manner.

Nearly as fast as the cots were ready they were occupied. To make sure that mine was not stolen from me, I also, without much undressing, laid myself away. A single

blanket was the only bedclothing provided. I had not lain long before I was driven, by an exceedingly offensive smell, to search for a cleaner neighborhood; but I found all the cots, fore and aft, were either occupied or engaged. I immediately returned, and that I might have a *dernier ressort*, left my shawl in that I had first obtained.

In the forward part of the cabin there was a bar, a stove, a table, and a placard of rules, forbidding smoking, gambling, or swearing in the cabin, and a close company of drinkers, smokers, card-players, and constant swearers. I went out, and stepped down to the boiler-deck. The boat had been provided with very poor wood, and the firemen were crowding it into the furnaces whenever they could find room for it, driving smaller sticks between the larger ones at the top by a battering-ram method.

Most of the firemen were Irish born; one with whom I conversed was English. He said they were divided into three watches, each working four hours at a time, and all hands liable to be called, when wooding, or landing, or taking on freight, to assist the deck-hands. They were paid now but thirty dollars a month—ordinarily forty, and sometimes sixty—and board. He was a sailor bred. This boat-life was harder than seafaring, but the pay was better, and the trips were short. The regular thing was to make two trips, and then lay up for a spree. It would be too hard on a man, he thought, to pursue it regularly; two trips "on end" was as much as a man could stand. He must then take a "refreshment." Working this way for three weeks, and then refreshing for about one, he did not think it was unhealthy, no more than ordinary seafaring. He concluded by informing me that the most striking peculiarity of the business was that it kept a man, notwithstanding wholesale periodical refreshment, very dry. He was of opinion that after the information I had ob-

tained, if I gave him at least the price of a single drink and some tobacco, it would be characteristic of a gentleman.

Going round behind the furnace, I found a large quantity of freight: hogsheads, barrels, cases, bales, boxes, nail-rod, rolls of leather, ploughs, cotton, bale-rope, and fire-wood, all thrown together in the most confused manner, with hot steam-pipes and parts of the engine crossing through it. As I explored farther aft, I found negroes lying asleep in all postures upon the freight. A single group only, of five or six, appeared to be awake, and as I drew near they commenced to sing a Methodist hymn, not loudly, as negroes generally do, but, as it seemed to me, with a good deal of tenderness and feeling; a few white people—men, women, and children—were lying here and there among the negroes. Altogether, I learned we had two hundred of these deck passengers, black and white. A stove, by which they could fry bacon, was the only furniture provided for them by the boat. They carried with them their provisions for the voyage, and had their choice of the freight for beds.

As I came to the bows again, and was about to ascend to the cabin, two men came down, one of whom I recognized to have been my cot neighbor. "Where's a bucket?" said he. "By thunder, this fellow was so strong I could not sleep by him, so I stumped him to come down and wash his feet." "I am much obliged to you," said I; and I was, very much; the man had been lying in the cot beneath mine, to which I now returned, and soon fell asleep.

I awoke about midnight. There was an unusual jar in the boat, and an evident excitement among people whom I could hear talking on deck. I rolled out of my cot and stepped out on the gallery. The steamboat "Kimball"

was running head-and-head with us, and so close that one might have jumped easily from our paddle-box on to her guards. A few other passengers had turned out besides myself, and most of the waiters were leaning on the rail of the gallery.

Occasionally a few words of banter passed between them and the waiters of the "Kimball;" below, the firemen were shouting as they crowded the furnaces, and some one could be heard cheering them: "Shove her up, boys! Shove her up! Give her hell!" "She's got to hold a conversation with us before she gets by, anyhow," said one of the negroes. "Ye har that ar' whistlin'?" said a white man; "tell ye thar ain't any too much water in her bilers when ye har that." I laughed silently, but was not without a slight expectant sensation, which Burke would perhaps have called sublime. At length the "Kimball" drew slowly ahead, crossed our bow, and the contest was given up. "De ole lady too heavy," said a waiter; "if I could pitch a few ton of dat ar freight off her bow, I bet de 'Kimball' would be askin' her to show de way mighty quick."

[Our traveller missed the experience which in former days travel now and then very lively upon the Mississippi,—a blow up of one or other of the racing boats. A bell was rung to rouse the cot-sleepers at half-past four, and the rest of the day was taken up in preparations for and eating the three meals.]

Every part of the boat, except the black hurricane-deck, was crowded; and so large a number of equally uncomfortable and disagreeable men I think I never saw elsewhere together. We made very slow progress, landing, it seems to me, after we entered Red River, at every "bend," "bottom," "bayou," "point," and "plantation" that came in sight; often for no other object than to roll out a barrel of flour or a keg of nails; sometimes merely to furnish news-

papers to a wealthy planter, who had much cotton to send to market, and whom it was therefore desirable to please.

I was sitting one day on the forward gallery, watching a pair of ducks, that were alternately floating on the river and flying farther ahead as the steamer approached them. A man standing near me drew a long-barrelled and very finely-finished pistol from his coat-pocket, and, resting it against a stanchion, took aim at them. They were, I judged, fully the boat's own length—not less than two hundred feet—from us, and were just raising their wings to fly when he fired. One of them only rose; the other flapped round and round, and when within ten yards of the boat dived. The bullet had broken its wing. So remarkable a shot excited, of course, not a little admiration and conversation. Half a dozen other men standing near me at once drew pistols or revolvers from under their clothing, and several were firing at floating chips or objects on the shore. I saw no more remarkable shooting, however; and that the duck should have been hit at such a distance was generally considered a piece of luck. A man who had been in the "Rangers" said that all his company could put a ball into a tree, the size of a man's body, at sixty paces, at every shot, with Colt's army revolver, not taking steady aim, but firing at the jerk of the arm.

This pistol episode was almost the only entertainment in which the passengers engaged themselves, except eating, drinking, smoking, conversation, and card-playing. Gambling was constantly going on, day and night. I don't think there was an interruption to it of fifteen minutes in three days. The conversation was almost exclusively confined to the topics of steamboats, liquors, cards, black-land, red-land, bottom-land, timber-land, warrants, and locations, sugar, cotton, corn, and negroes.

After the first night I preferred to sleep on the trunks

in the social hall [the lobby which contained the passengers' baggage] rather than among the cots in the crowded cabin, and several others did the same. There were, in fact, not cots enough for all the passengers excluded from the state-rooms. I found that some, and I presume most, of the passengers, by making the clerk believe that they would otherwise take the "Swamp Fox," had obtained their passage at considerably less price than I had paid.

[The above are the principal events of this description of steamboat life before the war. Our passenger's journey ended at Nachitoches, on the Red River, whence he started on a vagrant trip through Texas, in which we need not follow him.]

WINTER ON THE PRAIRIES.

G. W. FEATHERSTONHAUGH.

[Of the earlier records of English travel in America one of the most interesting and informing works is Featherstonhaugh's "A Canoe Voyage up the Minnay Sotor," a journey made by the author in 1835, and yielding much useful information in what is now the ancient history of the great West. The selection given is devoted to some of his prairie experiences during his journey through the Sioux country from Lac qui Parle to Lake Travers.]

RENVILLE had procured me a *charette*, or cart, to carry the tent, baggage, and provisions. I was to ride an old gray mare, with a foal running alongside; one of the Canadians was to drive the *charette*, and Miler and the rest were to walk. The morning was exceeding cold, and our road was along the prairie parallel with the lake. All the country in every direction, having been burnt over, was perfectly black, and a disagreeable sooty odor filled the

atmosphere. At the end of five hours of a very tedious march we reached a stream called *Wahboptah*, which may be translated *Ground-nut* river, the savages being in the habit of digging up the *Psoralea esculenta*, a nutritive bulbous root which grows here. The stream was about thirty feet wide, and had some trees growing on its banks. Having built up a good fire, the men proceeded to cook their dinner, while I strolled up the stream and collected some very fine unios, although I found it bitterly cold wading in the shallow water to procure them.

Having fed our horses on the grass near the stream which had not been burnt over, we started again for *Les Grosses Isles*, which we were instructed were distant about seven leagues, at the foot of Big Stone Lake. During the first two leagues the strong sooty smell of the country gave me a severe headache, and the weather became so cold that I was very uncomfortable; the fire, however, had not extended beyond this distance, for in about an hour and a half from our departure we came to the grass again, and I fortunately got rid of my headache. Our cavalry was exceedingly pleased by the change, the horses repeatedly winnowing to each other, as if to express their satisfaction. I here perceived a live gopher, or geomys, feebly running in the grass, and, dismounting, caught it. It apparently had strayed from its burrow, and had suffered from the weather. After examining it I let it go again, as it was impossible to take care of it, and I did not like to consign it to the men, as I knew they would kill and eat it, for they spared nothing.

As the evening advanced it became excessively cold, and a sharp wind, accompanied with frozen sleet, set in from the northeast: this soon became so thick that I could scarcely look up, much more see anything in the direction in which I was proceeding. Securing my person and ears

as well as I could with my blanket coat, I left it to the mare—who Renville told me had been more than once to Lake Travers—to take her own course. At length the sleet became so dense that I lost sight of everybody except the little foal, which, generally lagging behind in the wake of its dam, occasionally trotted up to her when in her great anxiety she called for it. I never saw greater marks of maternal feeling in an animal than in this poor creature to her young one.

As we advanced my situation became exceedingly painful: the frozen sleet came in streams upon my face and eyes when I looked up; my feet and hands were so cold that I had scarcely any power over them; my whole exterior, as well as the head and neck of the mare, was covered with a glazing of ice; night was advancing, and we were without a guide, upon a dreary and shelterless moor of very great extent, and far beyond our present day's journey, with no prospect of an abatement of the storm. In the course of a somewhat adventurous life I have occasionally had to meet with serious privations and to look danger rather steadily in the face, but I had never been where there was so slight a chance of any favorable change. I had not even the comfort before me that every bleak moor in England offers under similar circumstances to the imagination,—some kind of shelter to receive us at last, if we were not overpowered by the inclemency of the weather. It became absolutely necessary to consider what it was best to do, if overtaken before dark by a deep snow.

My first thought was not to separate myself from my party, which I had not seen for some time, for they had the cart, the tent, and the provisions; and if we failed in our attempt to reach the few trees that grew near Grosses Isles,—the only chance we had of finding materials to make

fire,—we could at any rate burn the *charette*, eat something, and cover ourselves as well as we could with the tent. This we inevitably should have to do if we missed the station we were aiming at, and of which there was imminent danger, as it was too thick for us to discern any trees at a distance. I therefore stopped the mare for a while and turned our backs to the storm, which seemed to be a great relief to us both. I had not heard the voices of the men for some time, but I knew the cart was slowly following me, and I thought it best to wait awhile ere I advanced towards them, as it was quite possible that I might deviate from the direction they were advancing in and separate myself from them altogether.

In about a quarter of an hour the voices of the men answered to the shouts I had from time to time made, and soon after they joined me, all of them covered with ice and icicles. The men were afraid we had got into the wrong track, having passed one or two that forked different ways, and this would have been a most serious misfortune. Upon appealing to Miler, who was covered with ice, his answer was, “N’ayez pas peur, monsieur; n’ayez pas peur.” I was well aware that this opinion of a sagacious guide like himself, trained to all the difficulties and incidents of Indian life, was better than that of the others, and I had more confidence in his prudence and in his conduct than I had in them; but still I was not without fear that darkness would overtake us; and if it had been left to myself, should have been inclined to attempt to set up the tent while it was daylight.

But Miler kept walking on before the *charette*, acting up to his character of guide in the most thorough manner. I determined, therefore, to be governed altogether by him, and taking my place in the rear of the *charette*, thought that, as I had now joined my party, I would alight, and

endeavor, by running a little, to restore the circulation of my limbs; but my feet and hands were so benumbed that I found it even difficult to dismount, or to stand when I reached the ground. As to the poor mare, she had icicles depending from her nose six or eight inches long, which I broke off; and holding the bridle under my right arm, and averting my face a little from the storm, I tried to run and draw her into a gentle trot, but it was all in vain; she was too anxious about her foal, which was tired and becoming weak, and could scarce come up to her when she called it. Full of anxiety as I was about myself, I could not but admire the solicitude of this good mother for her young, so earnestly does the voice of nature plead even with the inferior animals; that voice which God has planted in ourselves, no less for the safety of the species we are bound to protect than to express the intensity of the love we bear to our offspring.

After trying in vain to get the mare out of her snail's pace without at all improving my own situation, I perceived that I must be making leeway, for I had lost sight of the *charette*, so I determined to mount again and push her into a trot; we had got up a quasi-trot in the morning, and I hoped I might succeed in doing it again, but it took me a long time to do it. I was so benumbed that I could not regain my seat in the saddle until I had made several efforts, and then the adjusting my blanket-coat, and the covering my face to protect it from the cutting sleet, lost me so much time, that I was in a worse situation than ever,—separated from my party, night approaching, and somewhat apprehensive that in the gray light that was beginning to prevail I might wander from them and be unable to rejoin them. Being already half frozen, and feeling rather faint at my stomach, it was clear to me that in that case I should certainly be frozen to death.

Getting on as well as I could, and ruminating very unsatisfactorily upon these possible consequences, the storm began to abate, and the wind veered to the northwest; the mare knew this, and gave immediate signs of it by improving her pace. As we went on the weather began to clear up, and as I was straining my eyes to look for the *charette*, I heard the horse which drew it neigh several times; to this the mare immediately answered, and soon after came a cheer from the men. Miler was soon seen advancing to meet me, with the joyful intelligence that the trees at Grosses Isles were in sight. He said the horse in the *charette* was the first to see them and to announce the discovery by neighing; so that, although horses have not yet reached the art, as some asses have done, of making long speeches, yet the epithet of dumb animals is not altogether appropriate to them.

All our anxieties were now at an end, and we soon terminated this distressing ride, and reached a spot near a marsh, where three or four trees were standing. Fortunately for us, there was some dead wood on the ground, and some wild grass for the horses, which we immediately proceeded to tether and turn loose, that they might choose their own bite, for the night was too cold for them to stray far. Whilst the men were collecting wood and pitching the tent, I endeavored to produce a light, but my fingers were so benumbed that, after breaking several matches, I gave up the attempt, and began to run backward and forward, and strike my hands together, to restore my natural warmth. The sickness at my stomach from exposure and inanition now increased upon me, and I felt persuaded that I should have perished if I had been obliged to lie out on the prairie without a fire. At length, the men having got a fire up, I gradually recovered from my indisposition, and having eaten part of a biscuit felt much better. I

was sorry, however, to receive bad accounts from the men about the water, which we so much wanted to make soup for themselves and for my tea. It appeared that the only water that was to be obtained was from a hole in the swamp, and that it was as black as ink. On inspecting it, it was so thick and disgusting that I thought it impossible to use it, but remembering the saying of an old French fellow-traveller, "*Que tout est bon, quand il n'y a pas de choix,*" and knowing that nothing but a cup of tea would thoroughly revive me, and unwilling to send Miler a mile in the dark to Big Stone Lake to obtain clear water, I determined to make the best I could of it.

I had a large pot therefore filled, and boiled it, skimming it as the black scum came in immense quantities to the top, and having exhausted it of everything of that kind that it would yield, the very notable idea struck me to put a quantity of it into my kettle with some black tea and boil it over again, which I did, and really, when I poured it out it looked so like strong black tea, and was so good and refreshing, that I soon forgot everything about it except that it had restored me to life and animation. How many dead newts and other animals that had perished in the desiccation of the swamp that had attended the late drought went to form this tea-broth would not be easily calculated, but I forgave them and the sires that begot them.

Whilst we were at our meal, a half-perished Nahcotah Indian came to our fire, whom I saw at the dance of the braves the day before. I remembered him the moment he came up, from his having attracted my attention during the dance by firing his gun over the heads of the dancers, and then presenting it to one of the braves. Miler had informed me that it was not unusual upon such occasions for savages who look on to become so excited as to give every-

thing away that they have. This was what this poor devil had done; he had parted with his gun and all his little property, and was now going a journey of six or eight days to the Cheyenne River to kill buffalo, without any arms, and without anything to eat by the way. Some one had given him an old pistol without a lock to it, and seating himself by the fire without saying a word, he after a while pulled it out, and asked Miler if I would repair it, and give him some powder and ball? I told Miler to inform him that people could not make locks for pistols when they were travelling on the prairie in such stormy weather, but that I would give him something to eat, and directed the men to give him some of the pork and biscuit out of their pot, which he seemed to enjoy very much.

Feeling once more comfortable after a hearty supper, I entered my tent, and remained there to a late hour bringing up my notes, which I had few opportunities of doing at Lac qui Parle. Before I lay down I could not help contrasting the cheerless prospect before me at sunset and the suffering I experienced with the cheerful state of mind and body I had now returned to, and for which I trust I was most sincerely grateful to God, who had preserved me in continued health and safety. I felt completely wound up again, and ready to go on for any length of time, especially with the reasonable prospect of a good night's rest before me.

Such are the agreeable excitements attending this kind of life, to those who can enter without prejudice into the spirit of it. Certainly, whilst your progress is successful, it is delightful. You have plenty to eat, and you enjoy what you eat; you are amused and instructed; it is true it is often cold, but then it is not always so. You encamp when you please; you cut down as large a tree as you please, and you make as large a fire of it as you please,

without fearing an action of trespass. You kill deer out of any park you are passing through without being questioned, and you have the rare privilege of leaving your night's lodging without calling for the landlord's bill. All law and government proceed from yourself; and the great point upon which everything turns is the successful management of the party you are the head of. Prudence,¹ consistency, firmness, and a little generosity now and then by way of condiment, will carry such a traveller through everything.

But there is a reverse to the picture. Days and nights exposed to cold, soaking rains; want of food and water; unavoidable exaggeration of danger; painful solicitude for those dear to and absent from you, and most anxious moments when you occasionally feel that prudence is scarcely sufficient to insure your safety. Even the intense and curious impatience to push on in the face of apparent danger makes you at times feel a remorse on account of those you are leading into it. Such are the contrasts of feeling by which the wanderer in these distant regions, still unvisited by a ray of civilization, is frequently agitated.

[Reaching Lake Travers, one of the sources of the Red River of the North, he found quarters with Mr. Brown, the resident factor of the American Fur Company.]

After breakfast Mr. Brown showed me some very rare furs he possessed,—several very fine grizzly bear-skins (*Ursus ferox*), one of which was a bright yellow, a rare variety. He had also an exceedingly large and rich otter-skin, which, with many other things, I purchased of him. But my most valuable acquisition here was made from an Assiniboin chief, who came in about an hour before I departed. This was a fine bow, made of bone and wood, with a cord

of very strong sinew. The chief had performed a feat with it for which Wanetáh, a Nahcotah chief, had been celebrated. He had killed two buffaloes that were galloping on a parallel with his own horse at one draft of his arrow, it having passed through the first and inflicted a mortal wound upon the second.

The chief was very unwilling to part with it. We tried him several times in vain, and at length I offered him five gold-pieces, or twenty-five dollars. "*Máhzázhee! Héeyah!*" "Yellow iron! No!" he replied. At last Mr. Brown produced some brilliant scarlet cloth. The sight of it overcame his reluctance; it would make such beautiful leggings, and his squaws would be so delighted with it! So I gave him three yards of the cloth, and he delivered me the bow, a quiver of arrows, and a skin case, which contained it. Mr. Brown, of course, got his share of the amount, though he acted very fairly with me. Money is unknown to these savages, and they place no value upon it. He would not have taken twenty of these gold-pieces for his bow, but thought he had made a good bargain with it for the cloth, although I have no doubt Mr. Brown would have sold it to any one for ten dollars. It was an affair of barter, where both parties were satisfied, which, under similar circumstances, is perhaps the best definition of value.

A HUNTER'S CHRISTMAS DINNER.

J. S. CAMPION.

[Campion's "On the Frontier: Reminiscences of Wild Sports, Personal Adventure, and Strange Scenes," a work full of vitality, is the source of our present selection. Some of the author's adventures with hostile Indians are very interesting, but the following account of how the author won his Christmas dinner is likely to prove more attractive reading.]

On the evening of December 23 word was brought into camp by one of the hands, who had been looking up the mules, that he had come across the tracks of some twenty-five turkeys, within five or six miles of camp. This was indeed great news. Hope dawned upon us. We should have the fat turkey for Christmas, at all events.

At daylight the next day we started for the spot where the turkey-tracks had been seen; the snow was melted off the low ground, but still lay thick on the cedar and piñon ridges, and in patches on the bottoms.

On arriving at the place we took the trail, and soon ran it to a ridge-top, covered with piñon-trees, on the nuts of which the turkeys had been feeding. Here the tracks spread in all directions, since the turkeys had wandered about, each on his own hook, searching for nuts, and, to double the chances of finding them, we also separated, one going up, the other down, the ridge,—going, too, very carefully, for wild turkeys are the most wary of all birds, and require to be hunted with, if possible, more caution than do deer. And we knew not the moment when we might come upon our game, as it was highly probable they were close at hand; for turkeys, if unmolested, daily frequent

the same range of feeding-ground, until it is exhausted of food. By and by I came to where eight of the straggling birds had come together and started off again in company. The drove had evidently separated into two or more lots, and I followed the eight turkeys for many miles and for many hours without seeing fresh sign, until at length I came to the edge of a precipitous cliff overlooking a wide part of the valley, the river flowing just below me, and a large grove of big cottonwood-trees in a bottom not far away.

Evidently I was at the place from which the turkeys had flown off the night before to go to roost. I quickly descended, and, going under the cottonwood-trees, searched in the tangle and jungle for sign of their having roosted above, and soon satisfied myself that they had done so. The next step necessary was to discover where the turkeys had alighted in the morning; but this might entail a long search, and, as it was already past noon, I sat down to rest, eat the luncheon I had provided myself with, and come to some conclusion as to which direction I had best choose to make my first cast in.

I had not proceeded far on my way again, when I came suddenly upon a "sign" that arrested my attention and raised hope in my breast,—the tracks of a big fat buck! He had crossed the river-bottom diagonally, and his trail plainly told me all about him: the great width of and the distance between his tracks proclaimed his sex and size, and their depth in the ground his weight. He had been going at an easy trot; the glaze on them was bright, their edges unbroken; not a speck of drifted dust was on them; they were as fresh as new paint. They were not an hour old.

In imagination I smelt roasted venison, and instantly started in pursuit. I followed on the tracks until within an hour of sunset, but never got even a glimpse of the

deer; and by that time his trail had brought me to the bank of a stream flowing down one of the side valleys. The buck browsing here and there, but never stopping long in one place, had led me a wide circuit through and over valley and ridges. He had not seen or smelled me, however, since none of his movements showed that he had been alarmed.

The stream, at the place where the deer's track led to it, was unusually wide, consequently slack in current, and therefore frozen over. The snow still lay on the ice, and the buck's track, where he had crossed, looked but just made. The ice seemed firm, and I started to cross the creek. About ten feet from shore, bang through I went, waist deep, into the cold water, and broke and scrambled my way back with great difficulty, and with noise enough to frighten into a gallop any wild animal that might be within a quarter of a mile of me.

It was very disagreeable, very annoying, and *very* cold; and my clothes beginning to freeze on me, I started for camp at a brisk walk.

Just as the sun was going down I passed near to where the turkeys had flown off to roost. It struck me that by watching there a short time I might see them return to the same or a neighboring roost, knowing they often do so. This, however, was very cold work, my clothes being in a half-dried, half-frozen condition; and I was just going to give it up, when I heard the faint distant report of a rifle. The sound redoubled my attention, since I supposed that game was stirring.

In a few minutes I heard the quick sharp alarm call of the turkey, the unmistakable pit-pit, and saw four of them sail off from the edge of the cliff, at about sixty yards' distance from me, into the top branches of the trees forming one of the groups in the valley below. Drawing gently back, and

keeping as much as possible under cover, I made my way down into the valley, and started in the direction of the grove of trees in which the turkeys had settled.

It was getting dark, and I had gone but a short way, when, at a distance of about two hundred yards in front, a most extraordinary-looking object presented itself to my view. It looked like a haycock on legs with the handle of a pitchfork sticking out of it; it was steadily advancing through the gloom to where I stood, and arrived quite close to me before I could quite make out what it was. It proved to be my companion, with two turkeys tied together by the legs and slung over his shoulder across his rifle. The wind coming up the valley and blowing the feathers out in all directions had given the turkeys in the gloaming the extraordinary appearance that had astonished me so much. I gave a low whistle, and he joined me; I pointed to the turkeys in the trees. He dropped those he already had, hung them up out of wolf reach, and together we cautiously crept under the four roosting turkeys.

The light was very bad for rifle-shooting, but our front sights were of ivory, and our birds were skyed; so drawing the best beads we could, we fired simultaneously, and with great success, two fine birds dropping dead at our feet, —the others making off.

We congratulated each other, and started for camp with four fat turkeys,—and fat indeed they were, for they had been feeding all autumn on walnuts, hickory-nuts, grapes, sweet acorns, and piñons, at—or rather I suspect without—discretion.

We had a long trudge home, the turkeys getting apparently heavier every mile. As we tramped along my companion related his day's experience. About noon he had come upon the fresh tracks of some turkeys feeding along one of the ridges, and had followed the birds until

within about three hours of sunset, when, on peeping into an open glade, he saw fourteen of them scattered over it, picking up seeds and strutting about. As the turkeys seemed to be approaching him, he lay quite still, watching them through the thicket which concealed him. Ultimately they got quite close, giving many fair opportunities to shoot one. But he was determined not to fire unless necessary, preferring to wait for an occasion to present itself enabling him to kill two at one shot,—a very rare chance to obtain. He said it was most interesting to lie there at his ease and watch the motions and movements of the birds as they fed about and spread themselves in fancied security. At last his opportunity came, and firing without a moment's delay, he floored his birds, taking the head of the nearest clean off, and shooting the farther one through the body at the butt of his wings. This was the shot I had heard. I then told him what I had seen, and what had befallen me, and we got home quite done up, but rejoicing at our good luck.

Supper was waiting, and this meal, a blazing fire, and the pipe of peace, recruited us after our fatigues.

We had been very careful and sparing in the use of our spirits, not knowing how long it might be before we should be able to get a fresh supply, or what necessity might arise for their use; but this was considered an occasion when the flowing bowl ought to be indulged in, so grogs all round were mixed and our success celebrated. When this interesting ceremony had been concluded, my companion remarked to me, "Our luck has evidently turned, and, as gamblers always do, we ought to press our good fortune while it lasts. We have got our Christmas turkeys; no doubt the buck you followed is destined to grace our Christmas dinner. I am the man to kill it. Daylight shall see me on his track. You will behold my face no

more until I return with the haunches of the big buck." Then he turned in and I quickly followed his example. At the time I had not the remotest idea that my comrade really intended to put his threat into execution; I thought he was "gassing," and put it down to the credit of the flowing bowl.

Next morning I awoke at my usual time,—daybreak,—got out of my blankets, arose, stirred the fire into a great blaze and turned my back to it to get a good warm. I looked for my companion,—his blankets were empty; I glanced towards the arms,—his rifle and belt were gone; I felt his blankets,—they were cold. He had consequently been gone for some time.

I made a cast round, and struck his fresh tracks going in the direction of our last day's tramp. He had "gone for" the big buck. For my part, I was too tired to stir that day. Though then as hard as nails, and in first-rate condition and training, I was thoroughly done up and quite stiff—"played out"—with the previous day's wetting and walking, so remained in camp, and spent the time in helping to make the plum-pudding, dress and stuff the turkeys, and in resting,—principally in resting.

Night came, but not my comrade. I was not exactly uneasy about him, for he was a first-rate hunter and mountaineer; but many are the unexpected accidents that may happen to a lone wanderer in the wilderness.

I piled the wood on the fire and sat waiting for him until near midnight. Then I began to think I was foolish to do so, and had better go to sleep. Just as I was turning in the dogs ran out, frisking and capering, into the darkness. I heard the whistle of my comrade, and he strode into the light of the camp-fire. On his back, in a sling extemporized out of the skin of the deer, were the hind-quarters of a big buck. It was not yet twelve, and though a close

shave on being Christmas-day, our bill of fare was filled. Some more flowing bowl.

At breakfast the following day my companion narrated to us the story of his late hunt, as nearly as may be, in the following words:

He said, "By daylight I was where you came to grief by breaking through the ice, with this difference, that I was upon the other side of the creek, having crossed it higher up by means of a beaver dam. Being a cold trail, I pushed ahead sharply, keeping a good lookout, and in a little over two hours came to where the buck had lain down to pass the dark of the night. There being no morning moon, I knew he had not stirred before sunrise, and might, therefore, be browsing, or standing under some tree quite near; so continued my way most cautiously, never following the tracks when they crossed an open, unless obliged to do so on account of the ground being frozen hard, so that it often took me a long time to get his trail again after leaving it; but I knew, if the buck once saw or got a sniff of me, he might run ten miles without stopping.

"About eleven o'clock I sighted him. I was peeping cautiously out of a thicket, at whose edge I had just arrived, into a large park-like glade, and saw him under a big white oak-tree, eating the acorns. There was no cover between me and where the buck stood, so I could not risk trying to get nearer to him except by making a long detour, and the nearest edge of the timber I was in was too far off him to risk a shot from. There was, therefore, nothing for it but to sit down and wait until he pleased to move on or lie down, and so give me a chance to get nearer. Being hungry, I utilized the time by eating my luncheon, and then fell to smoking. Well, he kept me there over an hour, and then started off in a straight line in a trot. As he took a bee-line for the river, I knew what

he was after: he was going to take his 'little drink.' I, too, should have liked to indulge in a little drink, to wash down my luncheon.

"As soon as the buck was well under way I started at the double, on a parallel course, hoping to get a shot at him in the river's bottom. I crossed the open ground of a valley in a bend that was above and out of sight of the course he was taking, got into the cover along the river's bank, and followed it down, but saw nothing of him. By and by I came to where the buck had drunk. He had there crossed the river and gone straight on at a long easy trot towards the Sierra Verde.

"Should he intend going up the mountain my chance of seeing him again that day was over; if he was going to feed in the piñon ridges, then careful stalking and the avoidance of all mistakes would make him my meat. I could not afford to lose time by going to a beaver dam to cross, so at once peeled and waded over.

"After going about two miles, the buck's tracks showed he had subsided into a walk, and then almost immediately turned, to my great satisfaction, into the piñon-ridge country, in which, after about an hour's careful stalking, I sighted him again. He was strolling along, feeding; but it was getting pretty well on towards sunset before I was able to approach close enough to him to care to fire a shot, for I had taken so much trouble that I was determined to incur no risk I could avoid, but have patience until I had a certainty of killing him in his tracks. At last he stopped to browse in a little open, oval table-land, on the summit of a cedar ridge.

"The ridge-top was nowhere over a hundred yards across, and was surrounded with a thick fringe of dwarf cedars. Peeping through one of these dwarf cedars, I could see the deer's broad fat quarters about forty yards

in front of me. The buck was slowly walking from where I stood concealed. I put my cap in a fork of the cedar, laid my rifle-barrel on it, brought its stock to my shoulder, and bleated like a doe.

"The big buck stopped, turned his body half round, his head wholly so, and looked straight towards me with his head down.

"I drew a careful bead between his eyes, and dropped him—stone-dead!

"I ran up to bleed him, feeling quite relieved and glad at so successful a termination of ten hours' difficult hunting. I had not noticed it while engrossed by the interest of pursuit, but now found I was very hungry, and so lit a fire at once, that there might be roasting-coals ready by the time I had skinned my deer.

"I was soon enjoying a jolly rib-roast, making a tremendous meal, and recruiting myself for the tramp of from twelve to fifteen miles lying between me and the camp."

So, after all, we had our Christmas dinner according to programme, and a capital one it was, too.

The turkeys were *à merveille*, the venison delicious; for the big buck—he was nearly as big as a Mexican burro-deer—was very fat indeed. It is only the man who has eaten *really* fat wild venison who knows what good venison *really* is. The kidneys were completely covered with tallow, and my companion assured us that the buck cut nearly an inch of fat on the brisket. The quarters had been hung out to freeze all night, and were thawed in melted snow-water before being cooked, and so were quite tender.

The plum-pudding was over a foot in diameter; we could hardly pull it out of the pot. It was as good as possible, and followed by a bowl of punch, our punch-bowl being for the nonce a tin bucket; not to mince matters, it was our

horses' watering-bucket, which, though not elegant, was capacious, and the only utensil we had capable of holding the amount of punch the occasion called for.

No holly grew in the country, but the bright red berries of the Indian arrow-wood and of the bearberry-bush made beautiful substitutes, and there were more evergreens in sight than entire Christendom could have made use of, so our camp was profusely and gayly decorated. Altogether the day was well and duly celebrated, and it is marked with a white stone in the calendar of my memory.

A COLORADO "ROUND-UP."

ALFRED TERRY BACON.

[Among picturesque scenes of American life there are few to surpass those to be seen on the cattle ranges of the West, the home of the cow-boy, and of a mode of life widely removed from the quiet conditions of ordinary civilization. We append a description of daily scenes during a cattle "drive."]

By a fortunate circumstance I first saw that pastoral pageant known in the West as a "round-up" among the most picturesque surroundings that could have been chosen for it even in Colorado. In the northern counties the abrupt line of the Rocky Mountain foot-hills has nearly a north-and-south direction. From their base the grass-country rolls away in great brown undulations with a general downward slope towards the east for twenty miles, to the depression in the Plains through which the South Platte flows northward. Beyond the river the land rises again with an easy slope for several miles. It is from the side of this rise of ground that the superb panoramic view

of the Rocky Mountain range is seen in perfection. More than two hundred miles it stretches in sight, from the masses vaguely seen beyond the snowy shoulders of Pike's Peak to the lower mountains across the border of Wyoming.

At a considerable height on this slope runs a canal for irrigation, led out from the swiftly-descending Platte some miles above. One brilliant evening in July, a procession of wagons, each with its arched covering of canvas tinted by the sunset light, moved up the ascent to the bank of the ditch. The wagons were drawn up in line, about a hundred feet apart, and in five minutes each driver had unharnessed and "hobbled" his horses and a bright row of camp-fires were dancing in the twilight. The wagons were late in making a camp. Usually they precede the herd by several hours; but now close following is heard the lowing of the cattle, a slowly swelling volume of sound, as the drove approaches. At a spot a quarter of a mile from camp, where a level interrupts the general slope, the herd is massed together, or, in technical phrase, "bunched," and with the approach of darkness gradually all lie down for the night. One by one the herders drop away to camp as the cattle grow quiet, till but two are left riding in opposite directions about the sleeping herd, each singing vigorously, for the double purpose of warding off sleep and keeping the herd aware of their guard. The songs are continued by the successive watches till dawn, each singer pursuing his tune with a glorious independence of harmony with his mate; yet in the distance, as we sit beside the camp-fire or in waking moments at night, it is a cheerful, vigilant sound. In the cow-boy's dialect, "singing to 'em" has become a synonymous expression for night-herding.

Before the day's work is finished, there is a cry heard

not far away, "Ropes! ropes!" Two men start up from the resting groups and form a sort of temporary corral by stretching ropes from a wagon, and into it is driven the great herd of saddle-horses, to be "hobbled" for the night. Then the supper is served,—hastily cooked and hastily eaten. There is little comfort about it. A kind of lengthened tail-board is let down at the end of each wagon and supported by props. All the men of an "outfit"—that is, those banded to work together and share the use of one wagon—gather about this rude table and devour the meal, as they stand, with the lion's appetite which only a wholly out-door life can give.

Each "outfit" carries its tent, for use in bad weather; but with a dewless night and a dry soil no one cares to stake a tent after fourteen hours of hard riding. As soon as darkness has fairly settled over the earth, we are all rolled in our blankets side by side on the ground as peaceful as a row of mummies. Over us the heaven seems to glitter with a million stars not seen in lower countries, and sleep soon comes to the eyes turned upward towards its infinite calm. At intervals through the night the second, third, and "cocktail" reliefs will be called to go on duty: all hands must take their turns at night-herding.

With the first intimation of daylight the camp-fires are again dancing in line. By each a cook begins his breakfast preparations. Long before the appearance of the sun all the camp is astir; bedding is rolled and packed away ready for transportation. In the universal freshness of dawn the view westward from the hill is glorious. Through the meadows just below us winds the Platte, shaded by noble groves of cottonwood, the home of ten thousand meadow-larks, and already in the starry twilight they have begun a choral symphony of innumerable voices. . . .

But the light of the sun has hardly crept down the hill

to touch the tree-tops, still ringing with the morning song, before the hurried standing breakfast at the camp is over and each man has been appointed to his work by the captain of the "round-up." Three or four are named to guard the herd already gathered; some will have special care of the horses; all others, except the men in charge of wagons, are appointed to go "out on circle." Then follows a general saddling of horses, and, while the shadows still lie long across the plain, knots of horsemen, three or four abreast, strike out across the prairie on lines radiating in all directions from the camp. They will ride out on their courses for about five miles, except where the space is limited on the west by the river, and then, turning back, will drive in towards the centre, or, as they say, will "circle in," or "round up," all the cattle found in that district, a space with a diameter of ten miles. It is this operation carried on day after day over many thousand square miles of country which gives the name "round-up" to the annual gathering of the cattle on the Plains. . . .

The long, hot morning wastes away, unvaried by any event but the changing phases of the mirage and the gathering of cloud-puffs over the mountains. But when the sun has climbed within an hour or two of the meridian, some one less drowsy than the rest shouts, "They're coming!" Across the prairie where he points there is no living thing in sight, but beyond the most distant ridge a great dust-column seems to touch the sky and stand motionless. Then on the opposite horizon we catch sight of another cloud of dust, then another, and another appears, till the circle of approaching herds is complete. Presently the leaders of a procession mount the ridge. The long line of cattle comes steadily on. Half are lost to sight in the hollows of the prairie, half are seen on the crests of the swelling ground. Up and down the line

gallop the horsemen, urging and guiding the cattle. When the first sound from the herd reaches the ear, it is like a long trumpet-blast. Among the multitudes that are approaching there is not one but utters some sound of protest at this sudden infringement of the liberties of his wild life. The bellowing of the bulls, the lowing of the cows, the bleating of the calves, all are blended into a musical murmur in which no single voice can be distinguished.

With the advance of the cattle the deep note grows louder by almost imperceptible degrees, but at last, when the lines begin to be driven together at the centre, it has increased to a deafening uproar. Conversation is impossible; orders are shouted as in a storm at sea. When the converging processions have come so near that the animals can be distinguished, it is interesting to look closely at the passing lines, in which every breed and size and color of cattle is represented, from the small tawny Texas cow, as wild as a deer, to the large high-bred Durham bull that paces heavily along nodding his head at every step with an aristocratic air of self-satisfaction. The leaders of a herd are always the strong, fat steers, walking with a quick step, carrying their heads erect, and glancing about with restless eyes,—powerful, swift animals, ready when anything startles them to break into a stampede that will try the mettle of the best horses in the effort to stop them.

To one who has only known cattle in the Eastern States from watching working-oxen crawling along a road a mile and a half in an hour, or mild old dairy-cows loafing home from pasture at night, these spirited wild cattle seem a different race of animals. A new-comer to the plains can hardly believe that cattle are capable of great speed; but let him help in driving a herd for a few days, and his opinion is changed. A small calf lagging in the rear of a herd is sometimes seized with an insane notion that his

mother has been left behind if he loses sight of her for a moment. He starts backward on the trail, "like a streak of greased lightning," his pursuer would say. An accomplished cow-boy is often baffled for some time in such a chase. His horse, of course, will outstrip a calf in a long run; but just when he has headed him off, the exasperating little brute will dodge like a hare, and, while the horse is carried on by his impetus, the calf is off again as fast as ever in search of his forsaken parent. I have known a "tender-foot" to disappear over the bluffs on such a chase in the middle of the afternoon and return at night crestfallen, to acknowledge himself vanquished by a most insignificant little calf.

After the leaders of the herd generally follow the young stock,—the yearlings and two-year-olds,—with the fat dry cows scattered along the line; then the multitude of cows followed by calves; and last the lagging new-born calves, attended and coaxed along by fussy old mothers.

After the men have rushed into camp to swallow the noonday meal and have hurried back to the herd, the hardest and most interesting part of the day's work begins,—that is, the "cutting out," or sorting, the cattle of those brands which it is desired to separate from the promiscuous multitude. In the "general round-up" of the early summer the branding of the young stock is the chief business; but in this gathering the object is to separate certain cattle to be driven away to new grazing-grounds in the northern Territories. As we are riding out with the herders returning to their work, suddenly the body from head to foot is suffused with a sense of relief and refreshment, as when water touches a parched throat; for, after eight hours of scorching heat, a cloud has drifted across the sun as he begins his descent. It is only in such an arid, shadeless region that the scriptural metaphor of a "shadow in a

weary land" can have the full force which it had to its Asiatic author.

But now, as we came to the herd and turned to circle about it, the westward view was wonderfully changed. The background of mountains which in the morning had been so shadeless was now almost wholly in shadow. The cloud-puffs of an hour ago had spread and united into black canopies of storm-cloud. The range had assumed its darkest and most sublime aspect. As the eye runs up and down the long sweep of vision, here and there a white peak, flooded with sunshine from an unseen space between the storms, shines with an unearthly brightness amid the general blackness. Here and there the snowy head of a mountain looks out cold and wan through a transparent veil of showers. Every moment at some point along the rank of mountains a thunderbolt leaps across from cloud to peak with a quick shiver. A portentous darkness settles over the Great Divide. The pine-clad slopes are as black as night; the snowy summits leaden.

In contrast with the dark majesty of the background is the intense animation of the scene close at hand. Back and forth and round and round patrol the horsemen appointed to hold the cattle within certain boundaries. Men representing the owners of brands ride into the crowd of cattle, and, moving slowly about, observe the brand on every animal they pass. Usually a rider represents several owners. Catching sight of the brands for which they are looking, each man follows close at the heels of the cow he has selected, and, when she is near the edge of the herd, with a quick jump of his horse he tries to drive her beyond the boundaries. But commonly she detects his purpose, her gregarious instinct rebels, and with a quicker jump she is back again among her friends in the midst of the herd.

Then follows a hard chase around among the frightened cattle. Fifteen or twenty riders are soon in hot pursuit of their several brands. The whole herd is in commotion, with a general wheeling movement like a slow Maelstrom. The cattle are "ginning around," they say. The din of a thousand bellowing voices grows more thunderous as the herd grows more uneasy. To watch this tossing sea of animal life is exciting in the highest degree. The horses, trained by long experience in the work, dash into it with the fire of a war-horse going to battle. They take evident pleasure in their superiority over the inferior intelligence of the cattle. The showy, barbaric costumes of the cow-boys, the exquisite feats of horsemanship, the excitement of the horses warming to their work, the occasional dexterous use of the lasso in subduing some animal at bay, all the rush and tumult, the roar and shouting, the grace of muscular men and animals in swift motion, make up a spectacle so stirring and picturesque that all other exhibitions of equestrian skill seem tame in comparison.

As the cattle one by one are "cut out," they are taken in charge by the outside riders and driven away to swell the herd of those already gathered, which is grazing less than a mile away. After two hours of work, while the commotion seems still as violent as ever, the captain suddenly shouts the order, "Turn 'em loose!" The cry passes along, the guards draw to one side, the liberated cattle move quickly away, first in a body, then in a long scattering line, and the stillness of the desert succeeds the uproar. In the mean time, the camp has been broken up and the train of wagons has moved up the river eight or ten miles to fix a centre for the next day's work. There is little difference between one day and another. The same operation of "circling in" and "cutting out" will be repeated till every acre of ground in the allotted district has been

traversed. In the "general round-ups" of the spring each district contains several thousand square miles, and the work continues for six weeks or more. In this way a belt of country equal in length to the distance from Portland to Savannah is swept over by the "round-ups" every year.

Before this nomadic life of the Plains has been drained of its picturesque elements by the advance of civilization, I hope that some painter may arise who can grasp and worthily fix on canvas this most picturesque scene of American life,—one with the skill of a Church to paint the mountains and the genius of a Bonheur to catch the beauty of free animal existence. It should be a great picture, for in its distance would stand the continent's mountainous head crowned with its shining diadem, while in the nearer view there would be every attitude of bold horsemanship, every phase of intense muscular activity, brilliancy of costumes, the charm of wild life, the beauty of freedom.

AMONG THE COW-BOYS.

LOUIS C. BRADFORD.

[The preceding selection may be fitly followed by the following description of life among the cow-boys, those wild and wilful cattle-guards of the West, whose escapades form an interesting part of the romance of modern times.]

THERE is a peculiar fascination in the wild life of the cow-boys which tempts many young men of culture and refinement, reared in the enjoyment of every luxury in the East, but of adventurous dispositions, to come and live with these rude spirits on the frontier. Often for thirty-six hours continuously in the saddle, the hardships of their

lot are apparent. Cold black coffee, without sugar, drunk whenever the opportunity offers, is the sole luxury of the cow-boy. With a piece of bread in one hand and some jerked beef in the other, he will ride around a stampeded herd, eating as he goes, and as happy as a king on his throne. When night comes, provided his cattle are quiet, he will tie his horse to his leg, and, "covered with his hat," with a hummock of grass for his pillow, will sleep peacefully on the broad prairie, and dream perchance of his sweetheart far back in "God's country."

Perhaps his dreams will be rudely disturbed by the thunder of a thousand hoofs, as his cattle, becoming frightened at some noise, have stampeded, and the grass fairly pops beneath their cloven feet. Then it is he does his tallest riding, and, circling around his cows, brings them back to where they started. If a wild bull becomes obstreperous and unruly, a rider dashes past him, and, seizing his tail as he goes by, gives it a twist around the horn of his saddle, and in a trice the bull is fairly slung heels over head on his back. Two or three applications of this discipline will generally reduce the stiffening in a bull's tail to a minimum and render him as docile as a calf. An expert cow-boy can rope, throw down, and tie up a cow in just one minute from the time he rides up to her.

But a man knows nothing of "punching the heifers" who has not been through on the "trail" to Kansas. Going for days together without eating, never out of the saddle, mounting a fresh horse as fast as one is broken down, the limit of endurance is reached, and one who has stood the test, and can boast of having "busted the Indian Nation square open," attains respect in the cow-boy's eyes, and is considered to have taken his degree.

In 1874 the largest drive to Kansas ever recorded took place, when half a million beeves were driven through.

The trail was beaten into a broad path a mile wide and extending fifteen hundred miles in length. For miles and miles the string of lowing herds stretched along, while the keen riders darted hither and thither, keeping them well on the trail. At night the voices of the men singing to their sleeping cattle could be heard all along the line, while the long string of camp-fires, throwing their lurid glare against the black vault overhead, called back to the minds of many old gray-bearded cow-boys the stormy times when similar lines of light glimmered along the Rappahannock, and pierced the murky gloom of some Virginia night. Sometimes the music of a violin, sounding strangely shrill in the calm night air, would mingle with the deep tones of voices singing "The Maid of Monterey," or "Shamus O'Brien," the cow-boy's favorite tunes.

In passing through the Indian Nation it is no uncommon thing for a band of Indians, all painted and varnished up, to ride down on a beef-herd, and, singling out the finest cattle in the bunch, compel the white owners of the stock to cut them out in a separate flock, when the Indians will gather around them and run them off. Some years ago a party of five Indians came riding down on a herd which was resting on the banks of a small creek, and demanded of the boss herdsman ten of the fattest steers he had. The boss was a bold man, and, looking around on his fifteen stalwart cow-boys, swore that no five Indians should take his beeves from him, and, using the polite phraseology of the Plains, told his redskin visitors to "go to hell." The baffled five retired into the forest, but soon returned with an increased force of fifty men, who charged down on the defiant herdsman, whom they nearly beat to death with his own ramrod, stampeded his cattle, and ran off two hundred of them into the woods.

It is a wild, rough set of men that camp around the

herds after they have been driven through the Nation and are resting on the grassy plains of Kansas. Clad in the soiled and dusty jeans of the trail, for weeks in succession no water has touched their hands or faces, and, unshaven and unshorn, they give free reign to their exuberant spirits, taking some quiet Kansas village by storm, setting the tame local laws at defiance, and compelling the authorities to acknowledge the sovereignty of their native State.

The wages earned by these cow-boys are twenty-five dollars a month while they are herding on Texan ranges; but, as the toil and hardship encountered on the trail are so great, they are paid thirty-five dollars a month during the drive, and each man furnished with eight ponies to ride. Some of them return home by rail, visiting the cities of St. Louis and New Orleans, and managing to be despoiled of all their hard-earned money during their brief sojourn in "God's country;" but the greater number straddle their wiry little ponies and ride back through the Nation to Texas.

Not every one that started out to go up the trail lives to get back, and the nameless mounds that dot the sides of that broad path bear mute but powerful testimony to the danger that every hour surrounds the cow-boy. Whether they fall by a shot from some hostile savage lurking in a ravine near by, or are dropped by a six-shooter in the hands of a fellow-herder, they are hastily buried and soon forgotten. Entirely free from the restraining power of the law, men give free rein to their passions, and the six-shooter or Winchester rifle—the inseparable companions of the stock-drivers—is freely resorted to to settle disputed questions. It is very common for two bosses having charge of different herds to jump down from their horses and proceed to crack away at each other until one has bitten the dust.

When a violent storm, accompanied by thunder and lightning, stampedes the cattle, they will probably get mixed up with two or three other herds, and much labor and confusion results, and a considerable amount of tall swearing and fighting takes place before they can be separated and each herd gotten to itself. Every animal, besides the regular brand of the owner, has his tail bobbed and a "road-mark" put upon him during the drive, and in a mixed herd the rider goes in and "cuts out" all the cattle that bear his brand and runs them into a separate flock.

When cattle are sleeping it requires very little to stampede them. A loud breath, the clank of a chain tied to the leg of a wagon-mule, or the galloping of a horse will sometimes cause them to be up and gone in the twinkling of an eye. They will run over whatever is in their path, and the only way to stop them is to get them to "milling," or travelling in a circle, when they will wind themselves up like a ball and stop. It is instinctive with them to run when anything else is running, and away they go at the slightest noise, with the cow-boys in wild pursuit after them.

Living on Stinking Creek, in the Indian Territory, just off the great trail, is an Irishman named Fitzpatrick, who came to this country not many years ago, a common specimen of the bog-trotting Tipperary Paddy. Floating on the tide of emigration westward, he finally went into the Indian Nation, and, building a cabin in the timber where the trail crossed Stinking Creek, he proceeded to gather up the cattle that dropped from the great herds going through or were lost in some big stampede. His business thrived, and in time he married a Choctaw wife and went to housekeeping, and to day he is the owner of many thousand beeves, and is regarded as a rising stock-man. He

still collects the stampeded cattle in the creek timber,—a striking example of the strange ways in which men become rich. More than one big stock-man in Texas began his career by branding the mavericks, or wild unbranded and unclaimed heifers, found in the river timber. As an instance of the manner in which they worked up a herd, it is related of a successful stock-man that he started with a solitary steer, which he turned loose on the prairie, and *the first year he branded forty calves!* . . .

It was with a feeling of sincere regret that the writer of these lines, meeting with a severe accident, prepared to return to where his home nestled in the Alleghanies, after a sojourn of eighteen months with these wild riders of the plains. Lest the impression be conveyed that these are irreligious and godless men, let the reader fancy a group of men, belted and spurred, seated in a rude arbor, listening reverently to a tall cow-boy who has been selected by unanimous choice to read the Scriptures, and he can form an idea of the last Sunday I spent with the cow-boys. With slow and deliberate utterance, Phil Claiborne read out the words of the golden rule, "As ye would that men should do to you, do ye also to them likewise." Then he proceeded: "These, my hearers, were the words of the Lord Jesus Christ, who spoke as no man ever spoke; and I pledge you my word, gentlemen, the Bible is a good egg." Profound attention greeted the speaker, and continuing, he said, "Whatsoever is earthly can be soon replaced, but that which is on yon side of the grave is eternal. If you lose your property, you may acquire more; if you lose your wife, you may marry again; if you lose your children, you may have more; but if you lose your immortal soul, then up the spout you go."

HUNTING THE BUFFALO.

WASHINGTON IRVING.

[Washington Irving's experiences were not confined to the banks of the Hudson, the ruins of the Alhambra, and the rural scenes of English life, but were extended to embrace the far western region of his own country, a region at that time still the domain of savage nature. In 1832, the year embraced in his "Tour on the Prairies," the buffalo, or bison, now nearly extinct, roamed in vast herds over the treeless plains, and wild horses were little less abundant in the same broad region. The work in question is principally devoted to incidents of a hunter's life in pursuit of these two animals. The scene lies in the vicinity of the upper waters of the Red River.]

AFTER proceeding about two hours in a southerly direction, we emerged towards mid-day from the dreary belt of the Cross Timber, and to our infinite delight beheld "the great prairie," stretching to the right and left before us. We could distinctly trace the meandering course of the main Canadian and various smaller streams by the strips of green forest that bordered them. The landscape was vast and beautiful. There is always an expansion of feeling in looking upon these boundless and fertile wastes; but I was doubly conscious of it after emerging from our "close dungeon of innumerable boughs."

From a rising ground Beatte [an Indian member of the party] pointed out to the place where he and his comrades had killed the buffaloes; and we beheld several black objects moving in the distance which he said were part of the herd. The captain determined to shape his course to a woody bottom about a mile distant and to encamp there for a day or two, by way of having a regular buffalo-hunt and getting a supply of provisions.

As the troop defiled along the slope of the hill towards the camping-ground, Beatte proposed to my messmates and myself that we should put ourselves under his guidance, promising to take us where we should have plenty of sport. Leaving the line of march, therefore, we diverged towards the prairie, traversing a small valley and ascending a gentle swell of land. As we reached the summit we beheld a gang of wild horses about a mile off. Beatte was immediately on the alert, and no longer thought of buffalo-hunting. He was mounted on his powerful half-wild horse, with a lariat coiled at the saddle bow, and set off in pursuit, while we remained on a rising ground watching his manœuvres with great solicitude.

Taking advantage of a strip of woodland, he stole quietly along, so as to get close to them before he was perceived. The moment they caught sight of him a grand scamper took place. We watched him skirting along the horizon like a privateer in full chase of a merchantman; at length he passed over the brow of a ridge and down into a shallow valley; in a few moments he was on the opposite hill, and close upon one of the horses. He was soon head and head, and appeared to be trying to noose his prey; but they both disappeared again below the hill, and we saw no more of them. It turned out afterwards that he had noosed a powerful horse, but could not hold him, and had lost his lariat in the attempt.

While we were waiting for his return, we perceived two buffalo bulls descending a slope towards a stream which wound through a ravine fringed with trees. The young count and myself endeavored to get near them under covert of the trees. They discovered us while we were yet three or four hundred yards off, and, turning about, retreated up the rising ground. We urged our horses across the ravine and gave chase. The immense weight of head and

shoulders caused the buffalo to labor heavily up-hill; but it accelerates his descent. We had the advantage, therefore, and gained rapidly upon the fugitives, though it was difficult to get our horses to approach them, their very scent inspired them with terror. The count, who had a double-barrelled gun loaded with ball, fired, but missed. The bulls now altered their course, and galloped down-hill with headlong rapidity. As they ran in different directions, we each singled one and separated.

I was provided with a brace of veteran brass-barrelled pistols which I had borrowed at Fort Gibson, and which had evidently seen some service. Pistols are very effective in buffalo-hunting, as the hunter can ride up close to the animal, and fire at it while at full speed; whereas the long heavy rifles used on the frontier cannot be easily managed, nor discharged with accurate aim from horseback. My object, therefore, was to get within pistol-shot of the buffalo. This was no very easy matter. I was well mounted on a horse of excellent speed and bottom that seemed eager for the chase, and soon overtook the game; but the moment he came nearly parallel, he would keep sheering off with ears forked and pricked forward, and every symptom of aversion and alarm. It was no wonder. Of all animals, a buffalo, when close pressed by the hunter, has an aspect the most diabolical. His two short black horns curve out of a huge frontlet of shaggy hair; his eyes glow like coals; his mouth is open, his tongue parched and drawn up into a half crescent; his tail is erect, and tufted and whisked about in the air; he is a perfect picture of mingled rage and terror.

It was with difficulty I urged my horse sufficiently near, when, taking aim, to my chagrin, both pistols missed fire. Unfortunately, the locks of these veteran weapons were so much worn that in the gallop the priming had been shaken

out of the pans. At the snapping of the last pistol I was close upon the buffalo, when, in his despair, he turned round with a sudden snort and rushed upon me. My horse wheeled about as if on a pivot, made a convulsive spring, and, as I had been leaning on one side with pistol extended, I came near being thrown at the feet of the buffalo.

Three or four bounds of the horse carried us out of the reach of the enemy; who, having merely turned in desperate self-defence, quickly resumed his flight. As soon as I could gather in my panic-stricken horse and prime the pistols afresh, I again spurred in pursuit of the buffalo, who had slackened his speed to take breath. On my approach he again set off full tilt, heaving himself forward with a heavy rolling gallop, dashing with headlong precipitation through brakes and ravines, while several deer and wolves, startled from their coverts by his thundering career, ran helter-skelter to right and left across the waste.

A gallop across the prairies in pursuit of game is by no means so smooth a career as those may imagine who have only the idea of an open level plain. It is true, the prairies of the hunting-ground are not so much entangled with flowering plants and long herbage as the lower prairies, and are principally covered with short buffalo-grass; but they are diversified by hill and dale, and where most level are apt to be cut up by deep rifts and ravines, made by torrents after rains; and which, after yawning from an even surface, are almost like pitfalls in the way of the hunter, checking him suddenly when in full career, or subjecting him to the risk of limb and life. The plains, too, are beset by burrowing holes of small animals, in which the horse is apt to sink to the fetlock, and throw both himself and his rider. The late rain had covered some parts of the prairie, where the ground was hard, with

a thin sheet of water, through which the horse had to splash his way. In other parts there were innumerable shallow hollows, eight or ten feet in diameter, made by the buffaloes, who wallow in sand and mud like swine. These being filled with water, shone like mirrors, so that the horse was continually leaping over them or springing on one side. We had reached, too, a rough part of the prairie, very much broken and cut up; the buffalo, who was running for life, took no heed to his course, plunging down break-neck ravines, where it was necessary to skirt the borders in search of a safer descent. At length we came to where a winter stream had torn a deep chasm across the whole prairie, leaving open jagged rocks, and forming a long glen bordered by steep crumbling cliffs of mingled stone and clay. Down one of these the buffalo flung himself, half tumbling, half leaping, and then scuttled along the bottom; while I, seeing all further pursuit useless, pulled up, and gazed quietly after him from the border of the cliff, until he disappeared amidst the windings of the ravine.

Nothing now remained but to turn my steed and rejoin my companions. Here at first was some little difficulty. The ardor of the chase had betrayed me into a long, heedless gallop. I now found myself in the midst of a lonely waste, in which the prospect was bounded by undulating swells of land, naked and uniform, where, from the deficiency of landmarks and distinct features, an inexperienced man may become bewildered, and lose his way as readily as in the wastes of the ocean. The day, too, was overcast, so that I could not guide myself by the sun; my only mode was to retrace the track my horse had made in coming, though this I would often lose sight of, where the ground was covered with parched herbage.

To one unaccustomed to it, there is something inex-

pressibly lonely in the solitude of a prairie. The loneliness of a forest seems nothing to it. There the view is shut in by trees, and the imagination is left free to picture some livelier scene beyond. But here we have an immense extent of landscape without a sign of human existence. We have the consciousness of being far, far beyond the bounds of human habitation; we feel as if moving in the midst of a desert world. As my horse lagged slowly back over the scenes of our late scamper, and the delirium of the chase had passed away, I was peculiarly sensible to these circumstances. The silence of the waste was now and then broken by the cry of a distant flock of pelicans, stalking like spectres about a shallow pool; sometimes by the sinister croaking of a raven in the air, while occasionally a scoundrel wolf would scour off from before me, and, having attained a safe distance, would sit down and howl and whine with tones that gave a dreariness to the surrounding solitude.

After pursuing my way for some time, I descried a horseman on the edge of a distant hill, and soon recognized him to be the count. He had been equally unsuccessful with myself; we were shortly afterwards rejoined by our worthy comrade, the Vertuoso, who, with spectacles on nose, had made two or three ineffectual shots from horseback.

We determined not to seek the camp until we had made one more effort. Casting our eyes about the surrounding waste, we described a herd of buffalo about two miles distant, scattered apart, and quietly grazing near a small strip of trees and bushes. It required but little stretch of fancy to picture them as so many cattle grazing on the edge of a common, and that the grove might shelter some lowly farm-house.

We now formed our plan to circumvent the herd, and by getting on the other side of them, to hunt them in the

direction where we knew our camp to be situated; otherwise, the pursuit might take us to such a distance as to render it impossible for us to find our way back before night-fall. Taking a wide circuit, therefore, we moved slowly and cautiously, pausing occasionally when we saw any of the herd desist from grazing. The wind fortunately set from them, otherwise they might have scented us and have taken the alarm. In this way we succeeded in getting round the herd without disturbing it. It consisted of about forty head, bulls, cows, and calves.

Separating to some distance from each other, we now approached slowly in a parallel line, hoping by degrees to steal near without exciting attention. They began, however, to move off quietly, stopping at every step or two to graze, when suddenly a bull that, unobserved by us, had been taking his siesta under a clump of trees to our left, roused himself from his lair and hastened to join his companions. We were still at a considerable distance, but the game had taken the alarm. We quickened our pace, they broke into a gallop, and now commenced a full chase.

As the ground was level, they shouldered along with great speed, following each other in a line; two or three bulls bringing up the rear, the last of whom, from his enormous size and venerable frontlet, and beard of sunburnt hair, looked like the patriarch of the herd, and as if he might long have reigned the monarch of the prairie.

There is a mixture of the awful and the comic in the look of these huge animals, as they bear their great bulk forward, with an up-and-down motion of the unwieldy head and shoulders, their tail cocked up like the queue of pantaloon in a pantomime, the end whisking about in a fierce yet whimsical style, and their eyes glaring venomously with an expression of fright and fury.

For some time I kept parallel with the line without

being able to force my horse within pistol-shot, so much had he been alarmed by the assault of the buffalo in the preceding chase. At length I succeeded, but was again balked by my pistols missing fire. My companions, whose horses were less fleet and more way-worn, could not overtake the herd; at length Mr. L——, who was in the rear of the line and losing ground, levelled his double-barrelled gun and fired a long raking shot. It struck a buffalo just above the loins, broke its backbone, and brought it to the ground. He stopped and alighted to despatch his prey, when, borrowing his gun, which had yet a charge remaining in it, I put my horse to his speed, and again overtook the herd, which was thundering along, pursued by the count. With my present weapon there was no need of urging my horse to such close quarters; galloping along parallel, therefore, I singled out a buffalo, and by a fortunate shot brought it down on the spot. The ball had struck a vital part; it would not move from the place where it fell, but lay there struggling in mortal agony, while the rest of the herd kept on their headlong career across the prairie.

Dismounting, I now fettered my horse to prevent his straying, and advanced to contemplate my victim. I am nothing of a sportsman: I had been prompted to this unwonted exploit by the magnitude of the game and the excitement of an adventurous chase. Now that the excitement was over, I could but look with commiseration upon the poor animal that lay struggling and bleeding at my feet. His very size and importance, which had before inspired me with eagerness, now increased my compunction. It seemed as if I had inflicted pain in proportion to the bulk of my victim, and as if there were a hundred-fold greater waste of life than there would have been in the destruction of an animal of inferior size.

To add to these after-qualms of conscience, the poor animal lingered in his agony. He had evidently received a mortal wound, but death might be long in coming. It would not do to leave him here to be torn piecemeal, while yet alive, by the wolves that had already snuffed his blood, and were skulking and howling at a distance, and waiting for my departure, and by the ravens that were flapping about croaking dismally in the air. It became now an act of mercy to give him his quietus and put him out of his misery. I primed one of the pistols, therefore, and advanced close up to the buffalo. To inflict a wound thus in cool blood I found a totally different thing from firing in the heat of the chase. Taking aim, however, just behind the fore shoulder, my pistol for once proved true; the ball must have passed through the heart, for the animal gave one convulsive throe and expired.

While I stood meditating and moralizing over the wreck I had so wantonly produced, with my horse grazing near me, I was rejoined by my fellow-sportsman the Virtuoso; who, being a man of universal adroitness, and withal, more experienced and hardened in the gentle art of "venerie," soon managed to carve out the tongue of the buffalo, and delivered it to me to bear back to the camp as a trophy.

Our solicitude was now awakened for the young count. With his usual eagerness and impetuosity he had persisted in urging his jaded horse in pursuit of the herd, unwilling to return without having likewise killed a buffalo. In this way he had kept on following them hither and thither, and occasionally firing an ineffectual shot, until by degrees horseman and herd became indistinct in the distance, and at length swelling ground and strips of trees and thickets hid them entirely from sight.

By the time my friend, the amateur, joined me, the young count had been long lost to view. We held a con-

sultation on the matter. Evening was drawing on. Were we to pursue him, it would be dark before we should overtake him, granting we did not entirely lose trace of him in the gloom. We should then be too much bewildered to find our way back to the encampment; even now our return would be difficult. We determined, therefore, to hasten to the camp as speedily as possible, and send out our half-breeds and some of the veteran hunters, skilled in cruising about the prairies, to search for our companion.

We accordingly set forward in what we supposed to be the direction of the camp. Our weary horses could hardly be urged beyond a walk. The twilight thickened upon us; the landscape grew gradually indistinct; we tried in vain to recognize various landmarks which we had noted in the morning. The features of a prairie are so similar as to baffle the eye of any but an Indian or a practised woodsman. At length night closed in. We hoped to see the distant glare of camp-fires; we listened to catch the sound of the bells about the necks of the grazing horses. Once or twice we thought we distinguished them: we were mistaken. Nothing was to be heard but a monotonous concert of insects, with now and then the dismal howl of wolves mingling with the night breeze. We began to think of halting for the night and bivouacking under the lee of some thicket. We had implements to strike a light; there was plenty of firewood at hand, and the tongues of our buffaloes would furnish us with a repast.

Just as we were preparing to dismount we heard the report of a rifle, and shortly after the notes of the bugle, calling up the night guard. Pushing forward in that direction, the camp-fires soon broke on our sight, gleaming at a distance from among the thick groves of an alluvial bottom.

As we entered the camp, we found it a scene of rude

hunters' revelry and wassail. There had been a grand day's sport in which all had taken a part. Eight buffaloes had been killed ; roaring fires were blazing on every side ; all hands were feasting upon roasted joints, broiled marrow bones, and the juicy hump, far famed among the epicures of the prairies. Right glad were we to dismount and partake of the sturdy cheer, for we had been on our weary horses since morning without tasting food.

[It may be said in conclusion that the count—a young Swiss who accompanied the party—failed to return, and the next day a search for him had to be made, in which the Indians displayed strikingly their surprising skill in following a trail. The missing adventurer was at length found. He had spent the night in a tree for fear of wolves, and was heartily glad to see the face of his fellow-man again.]

IN THE COUNTRY OF THE SIOUX.

MERIWETHER LEWIS.

[The following selection, here attributed to Captain M. Lewis, is taken from McVickar's abridgment of the journals of Lewis and Clarke, the leaders of the celebrated expedition of 1804-6, sent out by President Jefferson to explore the country which he had obtained by treaty from France as part of the Louisiana purchase. The explorers passed across the plains and the Rocky Mountains while their pristine conditions were as yet undisturbed by the "white man's foot," and their story is of particular value from this fact. We take up their story in their journey through the Sioux country, on the Missouri. They had just passed a village of the Poncara tribe.]

TWENTY miles farther on [continues the narrative] we reached and encamped at the foot of a round mountain on the south, having passed two small islands. This mountain, which is about three hundred feet at the base, forms

a cone at the top, resembling a dome at a distance, and seventy feet or more above the surrounding highlands. As we descended from this dome, we arrived at a spot on the gradual descent of the hill, nearly four acres in extent, and covered with small holes; these are the residence of a little animal, called by the French *petit chien* (little dog), which sit erect near the mouth, and make a whistling noise, but, when alarmed, take refuge in their holes. In order to bring them out, we poured into one of the holes five barrels of water, without filling it, but we dislodged and caught the owner. After digging down another of the holes for six feet, we found, on running a pole into it, that we had not yet dug half-way to the bottom; we discovered, however, two frogs in the hole, and near it we killed a dark rattlesnake, which had swallowed a small prairie-dog. We were also informed, though we never witnessed the fact, that a sort of lizard and a snake live habitually with these animals. The *petit chien* are justly named, as they resemble a small dog in some particulars, although they have also some points of similarity to the squirrel. The head resembles the squirrel in every respect, except that the ear is shorter; the tail like that of the ground-squirrel; the toe-nails are long, the fur is fine, and the long hair is gray.

The following days they saw large herds of buffalo, and the copses of timber appeared to contain elk and deer. Just below Cedar Island [adds the journal], on a hill to the south, is the backbone of a fish, forty-five feet long, tapering towards the tail, and in a perfect state of petrification, fragments of which were collected and sent to Washington. . . .

September 17.—While some of the party were engaged in the same way as yesterday, others were employed in examining the surrounding country. About a quarter of a mile beyond our camp, and at an elevation of twenty feet above

it, a plain extends nearly three miles parallel to the river, and about a mile back to the hills, towards which it gradually ascends. Here we saw a grove of plum-trees, loaded with fruit, now ripe, and differing in nothing from those of the Atlantic States, except that the tree is smaller and more thickly set. The ground of the plain is occupied by the burrows of multitudes of barking squirrels, who entice hither the wolves of a small kind, hawks, and polecats, all of which animals we saw, and presumed that they fed on the squirrel. This plain is intersected, nearly in its whole extent, by deep ravines, and steep, irregular rising grounds, from one to two hundred feet. On ascending the range of hills which border the plain, we saw a second high level plain, stretching to the south as far as the eye could reach. To the westward a high range of hills, about twenty miles distant, runs nearly north and south, but not to any great extent, as their rise and termination is embraced by one view, and they seemed covered with a verdure similar to that of the plains. The same view extended over the irregular hills which border the northern side of the Missouri.

All around, the country had been recently burned, and a young green grass about four inches high covered the ground, which was enlivened by herds of antelopes and buffalo, the last of which were in such multitudes that we cannot exaggerate in saying that at a single glance we saw three thousand of them before us. Of all the animals we had seen, the antelope seems to possess the most wonderful fleetness. Shy and timorous, they generally repose only on the ridges, which command a view of all the approaches of an enemy; the acuteness of their sight distinguishes the most distant danger; the delicate sensibility of their smell defeats the precautions of concealment; and, when alarmed, their rapid career seems more like the flight of birds than

the movements of a quadruped. After many unsuccessful attempts, Captain Lewis at last, by winding around the ridges, approached a party of seven, which were on an eminence towards which the wind was unfortunately blowing. The only male of the party frequently encircled the summit of the hill, as if to announce any danger to the females, which formed a group at the top. Although they did not see Captain Lewis, the smell alarmed them, and they fled when he was at the distance of two hundred yards; he immediately ran to the spot where they had been; a ravine concealed them from him; but the next moment they appeared on a second ridge, at a distance of three miles. He doubted whether they could be the same; but their number, and the extreme rapidity with which they continued their course, convinced him that they must have gone with a speed equal to that of the most distinguished race-horse. Among our acquisitions to-day were a mule deer, a magpie, a common deer, and a buffalo. Captain Lewis also saw a hare, and killed a rattlesnake near the burrows of the barking squirrels.

September 18.—Having everything in readiness, we proceeded, with the boat much lightened, but the wind being from the northwest, we made but little way. At one mile we reached an island in the middle of the river, nearly a mile in length, and covered with red cedar; at its extremity a small creek comes in from the north. We then met some sand-bars, and the wind being very high and ahead, we encamped on the south, having made only seven miles. In addition to the common deer, which were in great abundance, we saw goats, elk, buffalo, and the black-tailed deer; the large wolves, too, are very numerous, and have long hair with coarse fur, and are of a light color. A small species of wolf, about the size of a gray fox, was also killed, and proved to be the animal which we had hitherto mis-

taken for a fox. There are also many porcupines, rabbits, and barking squirrels in the neighborhood. . . .

On the 20th they arrived at the Grand Detour, or Great Bend, and two men were despatched with the only horse to hunt, and wait the arrival of the boats beyond it. After proceeding twenty-seven and a half miles farther, they encamped on a sand-bar in the river. Captain Clarke, [continues the narrative], who early this morning had crossed the neck of the bend, joined us in the evening. At the narrowest part the gorge is composed of high and irregular hills of about one hundred and eighty or one hundred and ninety feet in elevation; from this descends an unbroken plain over the whole of the bend, and the country is separated from it by this ridge. Great numbers of buffalo, elk, and goats are wandering over these plains, accompanied by grouse and larks. Captain Clarke saw a hare, also, on the Great Bend.

Of the goats killed to-day, one is a female, differing from the male in being smaller in size; its horns, too, are smaller and straighter, having one short prong, and no black about the neck. None of these goats have any beard, but are delicately formed and very beautiful.

Shortly after midnight the sleepers were startled by the sergeant on guard crying out that the sand-bar was sinking, and the alarm was given; for scarcely had they got off with the boats before the bank under which they had been lying fell in; and by the time the opposite shore was reached the ground on which they had been encamped sunk also. A man who was sent to step off the distance across the head of the bend made it but two thousand yards, while its circuit is thirty miles. On the 22d they passed a creek and two islands, known by the name of the Three Sisters, where a beautiful plain extended on both sides of the river. This is followed by an island on

the north, called Cedar Island, about one mile and a half in length, and the same distance in breadth, and deriving its name from the quality of its timber. On the south side of this island is a fort and a large trading-house, built by a Mr. Loisel in order to trade with the Sioux, the remains of whose camps are in great numbers about this place. The establishment is sixty or seventy feet square, built with red cedar, and picketed in with the same materials.

The next day, in the evening, three boys of the Sioux nation swam across the river, and informed them that two parties of Sioux were encamped on the next river, one consisting of eighty and the second of sixty lodges, at some distance above. After treating them kindly, they sent them back with a present of two carrots of tobacco to their chiefs, whom they invited to a conference in the morning.

September 24.—At an island a few miles above High-water Creek they were joined by one of their hunters, who [proceeds the narrative] procured four elk; but while he was in pursuit of the game the Indians had stolen his horse. We left the island, and soon overtook five Indians on the shore; we anchored, and told them from the boat we were friends, and wished to continue so, but were not afraid of any Indians; that some of their young men had stolen the horse which their great father had sent for their great chief, and that we could not treat with them until he was restored. They said they knew nothing of the horse, but if he had been taken he should be given up. We went on, and at thirteen and a half miles we anchored one hundred yards off the mouth of a river on the south side, where we were joined by both the pirogues, and encamped; two-thirds of the party remained on board, and the rest went as a guard on shore, with the cooks and one pirogue; we have seen along the sides of the hills on the north a great deal of stone; besides the elk, we also observed a hare; the

five Indians whom we had seen followed us, and slept with the guard on shore. Finding one of them was a chief, we smoked with him, and made him a present of tobacco. This river is about seventy yards wide, and has a considerable current. As the tribe of the Sioux which inhabit it are called Tetons, we gave it the name of Teton River.

[On the 25th they met a party of Indians who threatened violence, and attempted to detain them by force, but were induced to desist by a threatening attitude on the part of the whites.]

September 26.—Our conduct yesterday seemed to have inspired the Indians with fear of us ; and as we were desirous of cultivating their acquaintance, we complied with their wish that we should give them an opportunity of treating us well, and also suffer their squaws and children to see us and our boat, which would be perfectly new to them. Accordingly, after passing, at one and a half miles, a small willow island and several sand-bars, we came to on the south side, where a crowd of men, women, and children were waiting to receive us. Captain Lewis went on shore, and remained several hours ; and observing that their disposition was friendly, we resolved to remain during the night to a dance, which they were preparing for us. Captains Lewis and Clarke, who went on shore one after the other, were met on landing by ten well-dressed young men, who took them up in a robe, highly decorated, and carried them to a large council-house, where they were placed on a dressed buffalo-skin by the side of the grand chief. The hall, or council-room, was in the shape of three-quarters of a circle, covered at the top and sides with skins well dressed and sewed together. Under this shelter sat about seventy men, forming a circle round the chief, before whom were placed a Spanish flag and the one we had given them yesterday.

This left a vacant circle of about six feet in diameter, in which the pipe of peace was raised on two forked sticks, about six or eight inches from the ground, and under it the down of the swan was scattered; a large fire, in which they were cooking provisions, stood near, and in the centre about four hundred pounds of excellent buffalo-meat, as a present for us.

As soon as we were seated an old man got up, and after approving what we had done, begged us to take pity on their unfortunate situation. To this we replied with assurances of protection. After he had ceased, the great chief rose and delivered an harangue to the same effect; then, with great solemnity, took some of the most delicate parts of the dog which was cooked for the festival, and held it to the flag by way of sacrifice; this done, he held up the pipe of peace, and first pointed it towards the heavens, then to the four quarters of the globe, and then to the earth, made a short speech, lighted the pipe, and presented it to us. We smoked, and he again harangued his people, after which the repast was served up to us. It consisted of the dog which they had just been cooking, this being a great dish among the Sioux, and used on all festivals; to this were added pemitigon, a dish made of buffalo-meat, dried or jerked, and then pounded and mixed raw with grease and a kind of ground potato, dressed like the preparation of Indian corn called hommony, to which it is little inferior. Of all these luxuries which were placed before us in platters with horn spoons, we took the pemitigon and the potato, which we found good, but we could as yet partake but sparingly of the dog.

We ate and smoked for an hour, when it became dark; everything was then cleared away for the dance, a large fire being made in the centre of the house, giving at once light and warmth to the ball-room. The orchestra was

composed of about ten men, who played on a sort of tambourine, formed of skin stretched across a hoop, and made a jingling noise with a long stick to which the hoofs of deer and goats were hung; the third instrument was a small skin bag with pebbles in it; these, with five or six young men for the vocal part, made up the band. The women then came forward, highly decorated; some with poles in their hands, on which were hung the scalps of their enemies; others with guns, spears, or different trophies taken in war by their husbands, brothers, or connections.

Having arranged themselves in two columns, one on each side of the fire, as soon as the music began they danced towards each other till they met in the centre, when the rattles were shaken, and they all shouted and returned back to their places. They have no step, but shuffle along the ground; nor does the music appear to be anything more than a confusion of noises, distinguished only by hard or gentle blows upon the buffalo-skin; the song is perfectly extemporaneous. In the pauses of the dance some man of the company comes forward and recites, in a sort of low guttural tone, some little story or incident, which is either martial or ludicrous, or, as was the case this evening, voluptuous and indecent; this is taken up by the orchestra and the dancers, who repeat it in a higher strain and dance to it. Sometimes they alternate, the orchestra first performing, and when it ceases the women raise their voices, and make a music more agreeable, that is, less intolerable, than that of the musicians.

The dances of the men, which are always separate from those of the women, are conducted very nearly in the same way, except that the men jump up and down instead of shuffling; and in the war-dances the recitations are all of a military cast. The harmony of the entertainment had nearly been disturbed by one of the musicians, who, think-

ing he had not received a due share of the tobacco we had distributed during the evening, put himself into a passion, broke one of the drums, threw two of them into the fire, and left the band. They were taken out of the fire; a buffalo robe, held in one hand, and beaten with the other by several of the company, supplied the place of the lost drum or tambourine, and no notice was taken of the offensive conduct of the man. We stayed till twelve o'clock at night, when we informed the chiefs that they must be fatigued with all these attempts to amuse us, and retired, accompanied by four chiefs, two of whom spent the night with us on board. . . .

The tribe which we this day saw are a part of the great Sioux nation, and are known by the name of the Teton Okandandas: they are about two hundred men in number, and their chief residence is on both sides of the Missouri, between the Chayenne and Teton Rivers. In their persons they are rather ugly and ill made, their legs and arms being too small, their cheek-bones high, and their eyes projecting. The females, with the same character of form, are more handsome; and both sexes appear cheerful and sprightly; but in our intercourse with them we discovered that they were cunning and vicious. . . .

Their lodges are very neatly constructed, in the same form as those of the Yanktons: they consist of about one hundred cabins (made of white buffalo dressed hide), with a larger one in the centre for holding councils and dances. They are built round with poles, about fifteen or twenty feet high, covered with white skins. These lodges may be taken to pieces, packed up, and carried with the nation wherever they go, by dogs which bear great burdens. The women are chiefly employed in dressing buffalo-skins; they seem perfectly well disposed, but are addicted to stealing anything which they can take without being ob-

served. This nation, although it makes so many ravages among its neighbors, is badly supplied with guns. The water which they carry with them is contained chiefly in the paunches of deer and other animals, and they make use of wooden bowls. Some had their heads shaved, which we found was a species of mourning for their relations. Another usage on these occasions is to run arrows through the flesh, both above and below the elbow.

While on shore to-day we witnessed a quarrel between two squaws, which appeared to be growing every moment more boisterous, when a man came forward, at whose approach every one seemed terrified and ran. He took the squaws, and without any ceremony whipped them severely. On inquiring into the nature of such summary justice, we learned that this man was an officer well known to this and many other tribes. His duty is to keep the peace; and the whole interior police of the village is confided to two or three of these officers, who are named by the chief, and remain in power some days, at least till the chief appoints a successor: they seem to be a sort of constable or sentinel, since they are always on the watch to keep tranquillity during the day, and guarding the camp in the night. The short duration of their office is compensated by its authority. Their power is supreme, and in the suppression of any riot or disturbance no resistance to them is suffered; their persons are sacred; and if, in the execution of their duty, they strike even a chief of the second class, they cannot be punished for this salutary insolence.

THE GREAT FALLS OF THE MISSOURI.

WILLIAM CLARKE.

[The journal of Lewis and Clarke, descriptive of their observations in the western United States, during their journey across the plains and mountains to the Pacific, are full of interesting incident. They were the first intelligent travellers through that vast region, and the story of their journey must always possess a high value for this reason, the aborigines and the animal life of that country being as yet undisturbed by the presence of the whites. They had now reached the upper Missouri and were within view of the Rocky Mountains. We quote from McVickar's abridgment of their journal.]

ON the north we passed a precipice about one hundred and twenty feet high, under which lay scattered the remains of at least one hundred carcasses of buffaloes, although the water, which had washed away the lower part of the hill, must have carried off many of the dead.

These buffaloes had been chased down the precipice in a way very common on the Missouri, and by which vast herds are destroyed in a moment. The mode of hunting is to select one of the most active and fleet young men, who is disguised by a buffalo-skin round his body; the skin of the head, with the ears and horns, being fastened on his own in such a way as to deceive the animal. Thus dressed, he fixes himself at a convenient distance between a herd of buffaloes and any of the river precipices, which sometimes extend for miles. His companions in the mean time get in the rear and on the sides of the herd, and at a given signal show themselves and advance towards them. The buffaloes instantly take the alarm, and, finding the hunters beside them, they run towards the disguised Indian or decoy, who leads them on at full speed towards the river,



DALLES OF THE COLUMBIA RIVER.

when, suddenly securing himself in some crevice of the cliff which he had previously fixed on, the herd is left on the brink of the precipice. It is then impossible for the foremost to retreat, or even to stop; they are pressed on by the hindmost rank, which, seeing no danger but from the hunters, goad on those before them, till the whole are precipitated over the cliff, and the shore is strewn with their dead bodies.

Sometimes, in this perilous seduction, the Indian himself is either trodden underfoot by the rapid movements of the buffaloes, or, missing his footing in the cliff, is urged down the precipice by the falling herd. The Indians then select as much meat as they wish, and the rest is abandoned to the wolves, and create a most dreadful stench. The wolves which had been feasting on these carcasses were very fat, and so gentle that one of them was killed with a spoutoon.

[They were now on the foot-hills of the mountains, in the country of the Minnetarees. Their journey met with obstructions from precipitous cliffs.]

These hills and river cliffs exhibit a most extraordinary and romantic appearance. They rise in most places nearly perpendicular from the river to the height of between two and three hundred feet, and are formed of very white sandstone, so soft as to yield readily to the action of water, but in the upper part of which lie embedded two or three thin horizontal strata of white freestone unaffected by the rain; and on the top is a dark rich loam, which forms a gradually ascending plain, from a mile to a mile and a half in extent, when the hills again rise abruptly to the height of about three hundred feet more. In trickling down the cliffs the water has worn the soft sandstone into a thousand grotesque figures, among which, with a little fancy, may

be discerned elegant ranges of freestone buildings, with columns variously sculptured, and supporting long and elegant galleries, while the parapets are adorned with statuary. On a nearer approach they represent every form of elegant ruins, columns, some with pedestals and capitals entire, others mutilated and prostrate, and some rising pyramidally over each other till they terminate in a sharp point. These are varied by niches, alcoves, and the customary appearances of desolated magnificence. The delusion is increased by the number of martins which have built their globular nest in the niches, and hover over these columns as in our country they are accustomed to frequent large stone structures.

As we advance there seems no end to the visionary enchantment that surrounds us. In the midst of this fantastic scenery are vast ranges of walls, which seem the productions of art, so regular is the workmanship. They rise perpendicularly from the river, sometimes to the height of one hundred feet, varying in thickness from one to twelve feet, being equally broad at the top as below. The stones of which they are formed are black, thick, and durable, composed of a large portion of earth, intermixed and cemented with a small quantity of sand, and a considerable proportion of talc or quartz. These stones are almost invariably parallelopipeds of unequal sizes in the wall, but equally deep, and laid regularly in ranges over each other like bricks, each breaking and covering the interstice of the two on which it rests. But, though the perpendicular interstice be destroyed, the horizontal one extends entirely through the whole work. The stones, too are proportioned to the thickness of the wall in which they are employed, being largest in the thickest walls. The thinner walls are composed of a single depth of the parallelopiped, while the thicker ones consist of two or more

depths. These walls pass the river at several places, rising from the water's edge much above the sandstone bluffs, which they seem to penetrate; thence they cross in a straight line, on either side of the river, the plains, over which they tower to the height of from ten to seventy feet, until they lose themselves in the second range of hills. Sometimes they run parallel in several ranges near to each other, sometimes intersect each other at right angles, and have the appearance of walls of ancient houses or gardens.

[After advancing some distance farther, the proper course to pursue became doubtful, and Captains Lewis and Clarke set out in different directions with exploring parties. Lewis's journey proved an adventurous one.]

In passing along the side of a bluff at a narrow pass, thirty yards in length, Captain Lewis slipped, and, but for a fortunate recovery by means of his spontoon, would have been precipitated into the river over a precipice of about ninety feet. He had just reached a spot where, by the assistance of his spontoon, he could stand with tolerable safety, when he heard a voice behind him cry out, "Good God, captain, what shall I do?" He turned instantly, and found it was Windsor, who had lost his foothold about the middle of the narrow pass, and had slipped down to the very verge of the precipice, where he lay on his belly, with his right arm and leg over it, while with the other leg and arm he was with difficulty holding on, to keep himself from being dashed to pieces below.

His dreadful situation was instantly perceived by Captain Lewis, who, stifling his alarm, calmly told him that he was in no danger; that he should take his knife out of his belt with the right hand, and dig a hole in the side of the bluff to receive his right foot. With great presence

of mind he did this, and then raised himself on his knees. Captain Lewis then told him to take off his moccasins, and come forward on his hands and knees, holding the knife in one hand and his rifle in the other. He immediately crawled in this way till he came to a secure spot. The men who had not attempted this passage were ordered to return, and wade the river at the foot of the bluff, where they found the water breast-high.

This adventure taught them the danger of crossing the slippery heights of the river; but, as the plains were intersected by deep ravines almost as difficult to pass, they continued down the stream, sometimes in the mud of the low grounds, sometimes up to their arms in water, and, when it became too deep to wade, they cut footholds with their knives in the sides of the banks. In this way they travelled through the rain, mud, and water, and, having made only eighteen miles during the whole day, encamped in an old Indian lodge of sticks, which afforded them a dry shelter. Here they cooked part of six deer they had killed in the course of the route, and, having eaten the only morsel they had tasted during the whole day, slept comfortably on some willow-boughs.

[A few days afterwards, Captain Lewis reached the Falls of the Missouri, which he eloquently describes.]

To the southwest [says the journalist] there arose from this plain two mountains of a singular appearance, and more like ramparts of high fortifications than works of nature. They are square figures, with sides rising perpendicularly to the height of two hundred and fifty feet, formed of yellow clay, and the tops seemed to be level plains. Finding that the river here bore considerably to the south, and fearful of passing the falls before reaching the Rocky Mountains, they now changed their course to

the south, and, leaving those insulated hills to the right, proceeded across the plain.

In this direction Captain Lewis had gone about two miles, when his ears were saluted with the agreeable sound of a fall of water; and, as he advanced, a spray, which seemed driven by the southwest wind, arose above the plain like a column of smoke, and vanished in an instant. Towards this point he directed his steps, and the noise, increasing as he approached, soon became too tremendous to be mistaken for anything but the Great Falls of the Missouri.

Having travelled seven miles after first hearing the sound, he reached the Falls about twelve o'clock. The hills, as he approached, were difficult of access, and two hundred feet high; down these he hurried with impatience, and, seating himself on some rocks under the centre of the Falls, enjoyed the sublime spectacle of this stupendous object, which since the creation had been lavishing its magnificence upon the desert, unknown to civilization.

The river, immediately at its cascade, is three hundred yards wide, and is pressed by a perpendicular cliff on the left, which rises to about one hundred feet, and extends up the stream for a mile; on the right the bluff is also perpendicular for three hundred yards above the fall. For ninety or a hundred feet from the left cliff the water falls in one smooth, even sheet over a precipice of at least eighty feet. The remaining part of the river precipitates itself with a more rapid current, and, being received as it falls by the irregular and somewhat projecting rocks below, forms a splendid spectacle of perfectly white foam, two hundred yards in length and eighty in perpendicular elevation. This spray is dissipated into a thousand shapes, sometimes flying up in columns of fifteen or twenty feet, which are then oppressed by larger masses of the white foam, on all

which the sun impresses the brightest colors of the rainbow.

Below the fall the water beats with fury against a ledge of rocks, which extends across the river at one hundred and fifty yards from the precipice. From the perpendicular cliff on the north to the distance of one hundred and twenty yards the rocks are only a few feet above the water, and, when the river is high, the stream finds a channel across them forty yards wide, and near the higher parts of the ledge, which rise about twenty feet, and terminate abruptly within eighty or ninety yards of the southern side. Between them and the perpendicular cliff on the south the whole body of water runs with great swiftness.

A few small cedars grow near this ridge of rocks, which serves as a barrier to defend a small plain of about three acres, shaded with cottonwood; at the lower extremity of which is a grove of the same trees, where are several Indian cabins of sticks; below which the river is divided by a large rock, several feet above the surface of the water, and extending down the stream for twenty yards. At the distance of three hundred yards from the same ridge is a second abutment of solid perpendicular rock, about sixty feet high, projecting at right angles from the small plain on the north for one hundred and thirty-four yards into the river. After leaving this the Missouri again spreads itself to its previous breadth of three hundred yards, though with more than its ordinary rapidity. . . .

June 14.—This morning one of the men was sent to Captain Clarke with an account of the discovery of the Falls; and, after employing the rest in preserving the meat which had been killed yesterday, Captain Lewis proceeded to examine the rapids above. From the Falls he directed his course southwest up the river. After passing one con-

tinued rapid and three cascades, each three or four feet high, he reached, at a distance of five miles, a second fall. The river is here about four hundred yards wide, and for the distance of three hundred rushes down to the depth of nineteen feet, and so irregularly that he gave it the name of the Crooked Falls. From the southern shore it extends obliquely upward about one hundred and fifty yards, and then forms an acute angle downward nearly to the commencement of four small islands close to the northern side. From the perpendicular pitch to these islands, a distance of more than one hundred yards, the water glides down a sloping rock with a velocity almost equal to that of its fall; above this fall the river bends suddenly to the northward.

While viewing this place, Captain Lewis heard a loud roar above him, and, crossing the point of a hill a few hundred yards, he saw one of the most beautiful objects in nature: the whole Missouri is suddenly stopped by one shelving rock, which, without a single niche, and with an edge as straight and regular as if formed by art, stretches itself from one side of the river to the other for at least a quarter of a mile. Over this it precipitates itself in an even, uninterrupted sheet, to the perpendicular depth of fifty feet, whence, dashing against the rocky bottom, it rushes rapidly down, leaving behind it a sheet of purest foam across the river. The scene which it presented was indeed singularly beautiful; since, without any of the wild, irregular sublimity of the lower falls, it combined all the regular elegancies which the fancy of a painter would select to form a beautiful waterfall.

The eye had scarcely been regaled with this charming prospect, when, at the distance of half a mile, Captain Lewis observed another of a similar kind. To this he immediately hastened, and found a cascade stretching across

the whole river for a quarter of a mile, with a descent of fourteen feet, though the perpendicular pitch was only six feet. This, too, in any other neighborhood, would have been an object of great magnificence; but after what he had just seen, it became of secondary interest; his curiosity being, however, awakened, he determined to go on, even should night overtake him, to the head of the falls. He therefore pursued the southwest course of the river, which was one constant succession of rapids and small cascades, at every one of which the bluffs grew lower, or the bed of the river became more on a level with the plains. At the distance of two and a half miles he arrived at another cataract of twenty-six feet. The river is here six hundred yards wide, but the descent is not immediately perpendicular, though the river falls generally in a regular and smooth sheet; for about one-third of the descent a rock protrudes to a small distance, receives the water in its passage, and gives it a curve.

On the south side is a beautiful plain, a few feet above the level of the falls; on the north the country is more broken, and there is a hill not far from the river. Just below the falls is a little island in the middle of the river well covered with timber. Here, on a cottonwood-tree, an eagle had fixed her nest, and seemed the undisputed mistress of a spot to contest whose dominion neither man nor beast would venture across the gulfs that surround it, and which is further secured by the mist rising from the Falls. This solitary bird could not escape the observation of the Indians, who made the eagle's nest a part of their description of the Falls, and which now proves to be correct in almost every particular, except that they did not do justice to their height. Just above this is a cascade of about five feet, beyond which, as far as could be discerned, the velocity of the water seemed to abate.

Captain Lewis now ascended the hill which was behind him, and saw from its top a delightful plain, extending from the river to the base of the Snowy Mountains to the south and southwest. Along this wide, level country the Missouri pursued its winding course, filled with water to its smooth, grassy banks, while about four miles above it was joined by a large river flowing from the northwest, through a valley three miles in width, and distinguished by the timber which adorned its shores. The Missouri itself stretches to the south in one unruffled stream of water, as if unconscious of the roughness it must soon encounter, and bearing on its bosom vast flocks of geese, while numerous herds of buffaloes are feeding on the plains which surround it.

Captain Lewis then descended the hill, and directed his course towards the river, falling in from the west. He soon met a herd of at least a thousand buffaloes, and, being desirous of providing for supper, shot one of them. The animal immediately began to bleed, and Captain Lewis, who had forgotten to reload his rifle, was intently watching to see him fall, when he beheld a large brown bear which was stealing on him unperceived, and was already within twenty steps. In the first moment of surprise he lifted his rifle, but remembering instantly that it was not charged, and that he had no time to reload, he felt there was no safety but in flight. It was in the open, level plain; not a bush nor a tree within three hundred yards, the bank of the river sloping, and not more than three feet high, so that there was no possible mode of concealment.

Captain Lewis therefore thought of retreating with a quick walk, as fast as the bear advanced, towards the nearest tree; but as soon as he turned, the bear rushed open-mouthed and at full speed upon him. Captain Lewis ran

about eighty yards, but finding that the animal gained on him fast, it flashed on his mind that by getting into the water to such a depth that the bear would be obliged to attack him swimming, there was still some chance for his life; he therefore turned short, plunged into the river about waist-deep, and, facing about, presented the point of his spontoon. The bear arrived at the water's edge within twenty feet of him; but as soon as he put himself in this posture of defence he seemed frightened, and, wheeling about, retreated with as much precipitation as he had advanced.

Very glad to be released from his danger, Captain Lewis returned to the shore, and observed him run with great speed, sometimes looking back, as if he expected to be pursued, till he reached the woods. He could not conceive the cause of the sudden alarm of the bear, but congratulated himself on his escape, when he saw his own track torn to pieces by the furious animal; and he learned from the whole adventure never to suffer his rifle to be for a moment unloaded.

HUNTING SCENES IN THE CANADIAN WOODS.

B. A. WATSON.

[As the literature of travel necessarily includes the deeds of the hunter in the haunts of wild animals, we have included among our selections a number of hunting scenes in different countries. The following incidents from a hunter's experience are from a popular work of sporting life, Watson's "The Sportsman's Paradise, or the Lake Land of Canada." The following is an exciting story of a deer-hunt on a Canadian lake]

THE forenoon of the next day, October 7, was spent in trout-fishing, grouse-shooting, and exploring the surround-

ing country. The captain conducted me about half a mile up the side of a steep hill, which had its base on Long Lake, to another lake situated at the top of this hill or mountain. While I recognize the fact that all mountain lakes occupy different planes or levels, some higher and some lower, still it seemed very unusual to climb the face of a steep hill, commencing at one lake, and find another just where you had expected to reach the hill-top. This lake was nearly round, and probably somewhat less than one-half mile in diameter. We saw during our morning peregrinations many old moose-tracks, and also many spots in the woods where these animals had browsed; while a few of these moose indications were certainly of recent origin.

The captain thought it wise to tarry in our present camp several days, to kill deer and dry the venison, in order that we might have a supply of meat while engaged in moose-hunting, independent of that which we might be able to kill during this period.

We had unanimously agreed that it was inexpedient to take dogs with us on the moose-chase. In this particular our experience fully confirmed the wisdom of our conclusion. The moose cannot be driven to water by deer-hounds, or any other species of dog with which I am familiar; and, therefore, had we taken these animals with us, they could only have served to announce our presence to the game which we sought, without being able to render any assistance. These facts will become more apparent to the reader when he has read other portions of this book, where the story of the moose-hunt has been told from beginning to end. We are now entering on Nature's grandest preserve,—we find here the “King of the Canadian Forest,” alias moose, deer, beaver, black bear, black wolf, speckled and lake trout, duck, ruffed grouse, etc. Here is

abundance of sport for the true sportsman. During the morning stroll we saw several beaver-houses which were occupied, and examined a large amount of their fresh work. These sights were highly interesting to me, but inasmuch as they have been so frequently described by others I shall omit them here.

It was already after twelve o'clock when we reached our camp. The guides prepared our dinner, which was speedily partaken of, and then we got off on a deer-hunt. The captain started into the woods with the dogs. George Ross and I entered a canoe, the former paddling across the lake to a point that commanded a view of a large portion of this water. We then stepped on dry land, and there patiently awaited the coming developments. We carefully scanned every visible portion of the lake. An hour passed and still we were watching; soon a grand splash was heard near the shore on the opposite side of the lake; the guide caught sight of the water which was thrown high into the air, but the head of the deer was scarcely visible to him while the animal was swimming towards us. The deer, which at first swam directly towards us, soon changed his course, and headed towards the foot of the lake. This change brought him plainly into view. A few minutes later the dog was seen running from the woods where the deer broke cover. The head and antlers of our game were visible above the waters of the lake, while he was swimming majestically without fear or even anxiety. We stood nearly half an hour watching the movements of this deer, since we could not safely move lest we should be discovered by the game and give him an opportunity to return to his forest home.

The reader should remember that this animal took to the water from the shore nearly opposite to the point on which we were standing, that the deer swam almost directly

towards us until he reached the middle of the stream, then turned downward, which gave us, in due time, an opportunity to come in unperceived behind him. Patiently we awaited this opportune moment. When it arrived the canoe, which had been drawn up on the shore near us, was quietly shoved out upon the water. Ross gently stepped to the stern with his paddle in hand, steadied our little bark while I entered its bow, where I seated myself and placed my rifle by my right side. Ross carefully pushed the little craft from its moorings, placed himself on his knees in that part of the canoe which properly trimmed it, and silently plied his paddle.

The little canoe moved noiselessly but rapidly forward, every stroke of the paddle bringing us nearer to the game. There was another paddle lying near my hand; I seized it and gave a helping hand, greatly increasing the speed. Forward, forward we went! We were unperceived, although within ten rods of a beautiful buck, which was swimming in the middle of the lake directly before us. My paddle was changed for my rifle. Nearer, still nearer we approached. The rifle was raised; the head was drawn, just below the base of the animal's skull. We were six rods distant from the deer. A little puff of white smoke covered the bow of our boat; the crack of the rifle was heard, and the lifeless body of the deer floated on the water, which was slightly tinged with blood.

Thus ended this chase. The carcass was towed to shore in front of our camp, and the captain met us there, having returned from the woods, where he had gone to start the dogs. The dog which followed the buck I had just shot was also now in our camp, but the other was still absent.

Nearly two hours had elapsed since the buck was shot. There were now on the shore, in front of our camp, the cap-

tain, George Ross, and myself, while Mildenerger had gone back into the forest in search of ruffled grouse. Suddenly the captain sprang from the rock on which he had been seated, placed his right hand on his forehead in such a position as to shade his eyes, while he leaned slightly forward and gazed steadily out over the surface of the lake a few seconds without uttering a single word. This position was one I had frequently seen him assume. I therefore recognized the fact that he had sighted game, or was at least swayed by this thought, and now endeavored to solve the question.

Thus he had stood for a few seconds, when he simply exclaimed, "*A deer in the lake!*" and instantly sprang forward to the canoe. I had followed him closely with rifle in hand, expecting to make the chase with him; he quickly pushed the frail bark into the water and hastily said, "Doctor, let George go with me in the canoe; it will be a hard chase; we will drive the deer to you."

A few seconds later the canoe was in the water, the captain in the bow, and George Ross in the stern, each on their knees with a paddle in their hands. The little birch bark was rushing rapidly forward, propelled by the power of four strong muscular arms. The sight is a grand one, and called to mind the impetuous charge of a squadron of cavalry in war times. The captain is most determined and energetic when in the pursuit of game; like the grandest charger in the squadron, he is bound to take the lead, while the others can only follow.

I had seated myself on a rock, soon after the departure of the guides, to watch the deer, whose head was visible to me in my position, although fully a mile away. I could not, however, at so great a distance determine whether the animal possessed antlers or not; but the leisurely manner in which it was swimming satisfied me its pursuers were

undiscovered until they had made at least three-fourths of the whole distance. The animal, when first discovered, was nearly opposite to our camp and within a few rods of the farther shore. The guides, in order to succeed in the accomplishment of their purpose, were compelled to make a considerable detour to the rear of the animal, and finally come up between it and the shore. Fortunately for us, they had remained for a considerable time undiscovered, and the animal, in the mean time, was gradually leaving the shore while swimming down the lake.

The moment came, however, when the pursuers were discovered, and the deer then made the most frantic efforts. I could see it spring forward with all its power, raising its head high in the air with each grand effort, but the guides are pulling stronger than before on their paddles. They seem, when viewed from my position, to be only a few rods in the rear of the animal, but the deer is heading for the shore, and seems about ready to bound into the forest. It is now evident to me that the chase can only last a few seconds.

I sprang from my seat; I recalled the fact that the guides had no gun in the boat; I realized that if they had one they could now easily kill the animal; they were almost on it. *An instant later and the canoe is seen between the deer and the shore.* A loud shout is heard from the guides; they wave their hats; they are victorious, and the disappointed deer now turns and swims towards the middle of the lake. Its grandest effort has been made; fatigue and disappointment slow down its movements.

It was now an easy task for the guides to direct the animal to any point on the lake. The canoe was kept in the rear, and when it was brought forward towards the right of the deer it would cause the animal to oblique to the left, and *vice versa*. In this manner they proceeded to cross the

lake, bringing the doe in front of the rock on which I was seated; but while she was still about six hundred yards away they called on me to take a shot. I demurred against their request, inasmuch as the portion of the animal now visible did not much exceed the dimensions of a pint cup. The first ball fired fell short about fifty yards, and then ricocheted nearly across the lake. Another shot was fired with no better result, and thus I continued for several minutes, but not without making some improvement. The shots were pronounced by the guides to be accurate, so far as the line of the target was concerned, but the balls still fell short of the mark.

The photographer, who was absent in the woods when I commenced firing, now made his appearance, and, seizing the Winchester rifle, began to compete with me. He was able to fire two shots with the repeater while I could fire one from the breech-loading Ballard. The contest between us was now very lively, and we succeeded in persuading the guides to bring the game nearer to us, so that the animal was not more than one hundred yards from the muzzles of our rifles. The bullets now fell in very close proximity to the doe's head; none were more than four or five inches from its centre. Six or eight shots have been fired with this degree of accuracy, when I send in one that breaks the skin over the base of the animal's skull. She dodges her head downward, but quickly brings it up again, when a shot from Mildenerger ends this trial of skill. The guides shout aloud and lustily cheer the photographer, who proudly puts down his rifle and wipes the perspiration from his brow.

[The author proceeds to give a series of interesting accounts of moose-hunts, somewhat too extended for the space we can give him. We shall therefore close with an amusing incident, in which "Jim," one of the guides, and his dog were the acting characters.]

The clouds have begun to disappear, the bright rays of sunshine are now lighting up our pathway, while the gentle zephyrs are moving the foliage of the forest-trees. The prospects of a fine day's sport are brightening at this moment. "Jim" exclaims, "We will have a good day of it yet!" while at the same time a partridge rises at the roadside, an event which is announced to us by the barking of the cocker-spaniel. This dog had taken his position at the foot of a small tree, the branches of which even overhung the roadway, and here continued to bark lustily, thus keeping the attention of the bird until the lad sent up his compliments, which she promptly acknowledged by tumbling to the ground.

The killing of this bird gave rise to a highly ludicrous scene, which I fully appreciated at the time, and which I can never readily forget. Jim had previously told me that the old cocker-spaniel had a very bad habit, and would "mouth" the birds whenever he could get hold of them, while he entirely disregarded the order to "bring dead bird." The owner of this dog had, likewise, informed me that the animal had never received any training, but naturally hunted very well, and was a good "treer." The instant the lad fired at this bird, Jim sprang into the woods with the alacrity of a hound, in order to grab the falling partridge before the old cocker could get hold of him.

The cocker, however, succeeded in getting the best of Jim, grabbed the bird in his mouth, and started off at full speed, while the guide followed him on the jump, as a fox-hound might follow a hare, shouting, with every bound, "Stop! stop! drop it! drop it!" until the woods became fairly resonant with these sounds. A few seconds later the dog emerged from the woods, still clinging to the bird, closely followed by the irate guide, who still yelled as though his life depended on this effort.

Here the old dog made the fatal mistake which finally cost him the prize he had attempted to steal. He started down the road as rapidly as he could run, but Jim steadily gained ground on him. Jim was wearing on this occasion a pair of heavy leather brogans, which contained in the soles about fifty steel spikes. These shoes, in fact, were procured by him while he was engaged in that occupation commonly designated as "river-driving," and these spikes were intended to nail him firmly to the floating logs, and thus prevent accident or injury from slipping. The road on which this race between the old cocker and our guide took place was nearly a mass of rocks, generally flat on the upper surface, which formed the road-bed, although they possessed many irregularities of surface, size, etc. The moment the guide and dog emerged from the woods and started off on this road, they were in full view of both my son and myself. The sparks eliminated by the contact of the spikes in Jim's brogans with the rocks in his pathway lighted up his trail, and added greatly to the ludicrousness of the scene. The race may be fairly said to have been nip and tuck, but the guide was slowly gaining on the cocker.

They had run about ten rods when Jim's brogans were in close proximity to the old dog's tail. It seemed highly probable at this moment that the guide's spiked shoes would be used as a petard for the destruction of the fugitive thief; but no, he has determined to capture him alive.

Behold them at this moment! Jim has dropped, with the intention of seizing the old rascal with his hands. The old dog—as if anticipating this movement—has suddenly jumped to one side, and instantly turned to retrace his steps. Jim struck the ground with a heavy thud, but was neither killed nor severely injured by this manœuvre. The dog, however, in the mean time, had been rapidly gaining on the guide, and was well started on the homeward

stretch. He occasionally turned his head, in order to catch a glimpse of his pursuer, but he did not halt, nor even slacken his pace.

Jim was soon on his feet again, but not until the dog had secured a good start. The guide was maddened by failure, and resumed the race with a fierce determination to win. Every second shortened the distance between the contestants when Jim had fairly succeeded in getting under way. The old dog seemed to fully comprehend the gravity of the situation, and occasionally turned his head for the purpose of discovering and estimating his danger. He had passed safely one-half of the home-stretch, but was at this moment compelled to drop the bird from his mouth. Jim was at this moment close upon the dog's heels, but he heeded not the dead bird, and was evidently determined to punish the thief. The old cocker showed at this time unmistakable signs of exhaustion and fear, and was unquestionably repentant. Jim's brogans were once more at the dog's caudal extremity, when he suddenly dodged aside and endeavored to reach the cover of the woods; but he was too completely exhausted to accomplish this object. He dropped to the ground and looked imploringly into Jim's eyes for mercy; but Jim heeded not the imploring looks and cringing attitude of the old rascal. He had him by the nape of the neck, and promptly administered the well-merited punishment. The old dog fairly yelled with pain, and Jim yelled back to him, "Steal the boy's bird, will you? I will teach you honesty! I will, you old rascal!"

The whole scene had been watched by the boy and myself. The comical part played by the actors can be more easily imagined than described. It caused peal after peal of laughter from the boy and myself. The boy finally dropped down upon the ground before the race ended, having been so convulsed with laughter as to be unable to

stand erect, while I only remained standing until the race ended, and then followed my son's example. Jim having administered the necessary chastisement to the dog, likewise sought rest on the bosom of mother-earth, while the old cocker, after having sulked a few moments in the woods, came sneakingly out and cautiously approached the contestant in the race, licked affectionately his hand, and then looked imploringly up into his eyes. The dog having thus humbly acknowledged the justice of the punishment which had been inflicted on him, was then freely forgiven by Jim, who patted him affectionately on the head and back.

Thus there was perfect harmony between the guide and the spaniel. The dog immediately reclined at Jim's side, placed his head affectionately on his master, having assumed a position which enabled him to look wistfully into the latter's face. Our little mongrel dog had not remained entirely inactive during these exciting events. In the race he participated, though falling far behind both actors; nevertheless he barked and wagged his tail continuously, thus showing the joy and interest which he felt in this part of the proceedings, although when the chastisement commenced he drew his tail between his legs, suddenly disappeared in the woods, and only reappeared after the lapse of an hour.

[Shortly after they started again the boy brought down another bird, whose presence had been announced by the cocker-spaniel.]

The old dog made no attempt on this occasion to secure the bird when it fell to the ground, but, on the contrary, did not move from the spot where he was standing, and allowed the guide to approach quietly the dead bird and to pocket the same. In fact, it may be stated that we had no further trouble with this dog during the remainder of the

hunt. He had previously shown much affection for Jim; but after the chase and the chastisement which he received he was certainly doubly affectionate towards his master. He had always hunted faithfully for us, but during the balance of the day he seemed to be more than usually active, and found many birds by the roadside.

THE GRAND FALLS OF LABRADOR.

HENRY G. BRYANT.

[The discovery of America has not yet been completed. Certainly that of its Canadian section has not been. There are wide districts of that great area on which human foot has never been set, and as late as 1895 we were advised of the discovery of a great river, with its head-waters near those of the Ottawa, but previously unsuspected. Labrador has been but little traversed, and the Grand Falls had only been seen by two white men previously to Mr. Bryant's visit in the summer of 1891. What we know of it, and of the course of the Grand, or Hamilton River, we owe chiefly to him, since the only earlier account is the imperfect one given by John McLean, describing his visit in 1839. The enterprise was not an easy one, as will appear from the description of the hardships of the journey. The party consisted of Mr. Bryant, of Philadelphia, Professor Kenaston, of Washington, John Montague, a young Scotchman, and Geoffrey Ban, an Eskimo, the last two hailing from Labrador. These four had to drag a heavy boat against a swift current for many miles up the stream, in the manner described below.]

THE usual method employed was what is technically known as "tracking." That is, a strong rope, about the thickness of a clothes-line, was tied to the gunwale of the boat just aft of the bow. To the shore end of this broad leather straps were attached. With these across their shoulders, three of the party tugged away along the rocky bank, while number four of our crew, with an oar lashed

in the stern, steered a devious course among the rocks and shallows of the river. The "tow-path" in this instance was of the roughest and most diversified character. Sandy terraces and extended reaches covered with glacial boulders characterized the lower portion of the river, while farther up-stream great numbers of smaller boulders, insecurely lodged on the precipitous sandy banks, would baffle us by the precarious footing they afforded. Where a combination of this "rubble" and a troublesome rapid occurred, it was only by the most violent exertion and no end of slipping and sliding that the tension of the tow-line could be maintained on the treacherous ground. Then, again, stretches of steep rocky bank, where no tracking was possible, would often compel us to scale the rugged cliffs and pass the line from one to another over various obstacles. Wading through the water was frequently the only resource. This was always the case when we reached a place in the river where the spring freshets had undermined the banks, and where numbers of trees, stumps, and underbrush littered the shore, forming *chevaux-de-frise* of the most formidable character.

The long daylight of midsummer in this subarctic region was a point in our favor, enabling us to work to the limit of our strength. Here, indeed, we found that "Night and day hold each other's hands upon the hill-tops. . . . No sooner does the sun set north by west, than, like a giant refreshed, it rises again north by east."

[At times they had to drag the boat up rapids, at times to unload and transport it and its contents around falls by difficult portages. Through much of the course the stream ran at about eight miles an hour, but many rapids added to this speed.]

Judged by ordinary standards of travel, our advance up the river was slow indeed; but to those who are familiar

with canoe transportation on Canadian rivers, I am sure our progress will appear respectable, when the unwieldy character of our boat is taken into consideration. There seems to be something positively personal and vindictive in the resistance which rapids make to a traveller's advance into a wild and mountainous country. There was, accordingly, a cumulative feeling of satisfaction as one after another of these barriers of nature's making were surmounted. In the swollen condition of the river, the struggle with these wild rapids was often as savage and exhilarating as one could desire. John and myself usually took the lead on the tow-line, Geoffrey busying himself with keeping the line clear of snags, while to Professor Kenaston was assigned the steersman's part. Bending to their work, the linemen would clamber along the bank, dragging the slowly yielding mass up-stream. Ofttimes the force of the current would carry out the boat far into mid-stream, until the full length of line would be exhausted. We could do nothing then but hang on like grim death and watch our craft toss and roll amid the billows, until, like a spirited horse, gradually yielding to the strain, she would turn her head shoreward. Professor Kenaston, meanwhile, with tense muscles, bending to the steering-oar, skilfully guided his charge amid the encompassing rocks and eddies,—the only quiet figure on the surging flood of the river. . . .

Looking back on these days spent along the river, I recall how each one was filled with incident and how all were stimulated by the uncertainty of what lay before us. It is the experience of many that, in recalling travels of this kind, the pleasant features of the time are remembered with more distinctness than the trying ones. So in the retrospect of this journey, many of the incidents, unpleasant at the time, are softened by time's perspective, while

the bright ones stand out in bolder relief and recur to the memory with pleasure. One awkward adventure, however, which occurred on the first day on the Mouni Rapids, I have not yet succeeded in relegating to the realm of forgetfulness. We were approaching a rocky point, similar to many others we had encountered, past which the water dashed with angry violence. It was our custom, on reaching such a place, to first detach the canoe, and then to shove out the boat obliquely from the still water, to allow her bow to fairly meet the swifter current. On this occasion, while Montague and I, facing up-stream, were waiting on the bank above for the signal to advance, the boat, through some carelessness, was pushed out from the quiet eddy squarely into the swift water. The full force of the torrent struck her abeam, and away she swept downstream like a thing possessed. Taken unawares, no time was given to throw off the leather straps from our shoulders, and instantly we were thrown from our feet and dragged over the rocks into the river by the merciless strength of the flood. Most fortunately for me, the circular strap slipped over my head as I was being dragged through the water. Montague's also released itself, and the runaway sped down-stream a quarter of a mile before stopping. On clambering up the bank I found Montague stunned and bleeding from a scalp wound. Aside from some abrasions of the skin, I was none the worse for the shaking up, and after a brief delay Montague revived, and we resumed our "tow-path" exercise.

[The climate did not prove as severe as was expected, the temperature being just low enough to be exhilarating and bracing. Game and fish were abundant, and two black bears were killed by the party.]

The declining sun of August 20 beheld our small craft glide into the smooth waters of Lake Wanakopow. The

first view of the lake was beautiful, and most grateful to our eyes after the long struggle with the rapids. Even Geoffrey and John, usually indifferent to scenic effects, could not conceal their admiration as we glided by towering cliffs and wooded headlands, and beheld at intervals cascades leaping from the rocks into the lake, their silvery outlines glistening in the sun and contrasting distinctly with the environment of dark evergreen foliage. This romantic sheet of water stretches in a northeasterly and southwesterly direction a distance of about thirty-five miles, and has an elevation above sea-level, according to my aneroid observations, of four hundred and sixty-two feet. Low mountains of granite and gneiss rise on both sides, and the average width of the lake is less than one mile. A sounding taken near the middle showed a depth of four hundred and six feet. This narrow elevated basin is probably of glacial origin, the presence of great numbers of boulders and the rounded appearance of the hill summits pointing to a period of ice movement.

[They finally reached a point beyond the previously stated location of the falls, and on August 27 attained the head of boat navigation in a wide, shallow rapid.]

While at the Northwest River Post we had learned from a reliable Indian that the old trail, long disused, led from this point on the river to a chain of lakes on the table-land. By following these lakes and crossing the intervening "carries," the rapid water which extends for fifteen miles below the Falls could be circumvented, and the traveller brought finally to the waters of the Grand River, many miles above the Grand Falls. Our plan was to follow this old trail for several days, and then to leave the canoe and strike across country in a direction which we hoped would bring us again to the river in the vicinity of the Falls.

It was deemed best to follow this circuitous canoe route rather than to attempt to follow the banks of the river on foot, in which case everything would have to be carried on our backs through dense forests for many miles.

After a long search the old trail was found, and, leaving Geoffrey in charge of the main camp on the river, the other members of the party took the canoe and a week's provisions, and began the ascent of the steep path which led up to the edge of the elevated plateau, which here approaches the river. Making a "carry" of three miles to the north along the old trail, we reached the first of the chain of lakes, where we erected a rude shelter and camped for the night. A violent storm arose during the night, and next day we lost much time in seeking for the continuation of the trail on the opposite side of the lake. Having been disused for twenty-seven years, the path, where it came out on the lake-shore, was distinguished by no "blazes" on the trees, or recent choppings. This necessitated a careful examination of the shores on all the lakes, and caused considerable delay.

We were now on the great table-land of the Labrador interior, and, wishing to get a good outlook, climbed a conspicuous hill near by to scan the adjacent country. A view truly strange and impressive was before us. As far as the eye could reach extended an undulating country, sparsely covered with stunted spruce-trees, among which great weather-worn rocks gleamed, while on all sides white patches of caribou moss gave a snowy effect to the scene. A hundred shallow lakes reflected the fleeting clouds above, their banks lined with boulders, and presenting a labyrinth of channels and island passages. Low hills arose at intervals among the bogs and lakes, but the general effect of the landscape was that of flatness and bleak monotony.

The continuation of the old Nascopie trail remaining invisible, to escape the discomfort of another rainy night on the plateau we returned to the shelter of the camp on the river. On August 30 we returned to Geoffrey Lake, where our patient search for the trail was at last successful.

Next day we advanced along the trail, which led us over four "carries" and across five lakes. For convenience of reference, we applied names to some of these small sheets of water. Thus, the third one of the chain was designated "Gentian Lake," from finding the closed variety of the blue gentian growing on its borders. The next day we turned aside from the dim trail and paddled to the north-western extremity of the sixth lake, where we drew the canoe ashore and prepared for the tramp across country. Arrayed in heavy marching order, and carrying nearly all that remained of our provisions, we were soon advancing westward on a course which we hoped would soon bring us to the river in the vicinity of the Falls. The country we were now passing through was of the most desolate character, denuded of trees and the surface covered with caribou moss, Labrador tea plants, blueberry-bushes, and thousands of boulders. By keeping to the ridges fair progress was made; but when compelled to leave the higher ground and skirt the borders of the lakes, dense thickets of alders and willows were encountered, and these greatly impeded our advance. Language seems inadequate to describe the desolation of this upland landscape. No living thing was encountered, and the silence of primordial time reigned supreme.

Just before sunset we went into camp on a hill-side near a large lake, and soon after, from the top of a high rock, beheld a great column of mist rising like smoke against the western sky. This we knew marked the position of

the Falls, and, needless to say, our spirits rose—oblivious of our bleak surroundings—as we contemplated the near attainment of our journey's end. During the night the thermometer registered a minimum temperature of forty-one degrees, and we were treated to a superb display of Northern Lights.

September 2 was a day memorable as marking the date of our arrival at the Grand Falls. A rough march over the rocks and bogs intervened, however, before we reached this goal. As we approached the river, spruce-forests of a heavier growth appeared, and, pressing on through these, although we could no longer see the overhanging mist, the deep roar of falling waters was borne to our ears with growing distinctness. After what seemed an intolerable length of time—so great was our eagerness—a space of light in the trees ahead made known the presence of the river. Quickening our steps, we pushed on, and with beating hearts emerged from the forest near the spot where the river plunged into the chasm with a deafening roar.

A single glance showed us that we had before us one of the greatest waterfalls in the world. Standing at the rocky brink of the chasm, a wild and tumultuous scene lay before us, a scene possessing elements of sublimity and with details not to be apprehended in the first moments of wondering contemplation. Far up-stream one beheld the surging, fleecy waters and tempestuous billows, dashing high their crests of foam, all forced onward with resistless power towards the steep rock, whence they took their wild leap into the deep pool below. Turning to the very brink and looking over, we gazed into a world of mists and mighty reverberations. Here the exquisite colors of the rainbow fascinated the eye, and majestic sounds of falling waters continued the pæan of the ages. Below and beyond the seething caldron the river appeared, pursuing its turbulent

career, past frowning cliffs and over miles of rapids, where it heard "no sound save its own dashings." The babel of waters made conversation a matter of difficulty, and after a mute exchange of congratulations, we turned our attention to examining the river in detail above and below the Falls.

A mile above the main leap the river is a noble stream four hundred yards wide, already flowing at an accelerated speed. Four rapids, marking successive depressions in the river-bed, intervene between this point and the Falls. At the first rapid the width of the stream is not more than one hundred and seventy-five yards, and from thence rapidly contracts until reaching a point above the escarpment proper, where the entire column of fleecy water is compressed within rocky banks not more than fifty yards apart.

Here the effect of resistless power is extremely fine. The maddened waters, sweeping downward with terrific force, rise in great surging billows high above the encompassing banks ere they finally hurl themselves into the gulf below. A great pillar of mist rises from the spot, and numerous rainbows span the watery abyss, constantly forming and disappearing amid the clouds of spray. An immense volume of water precipitates itself over the rocky ledge, and under favorable conditions the roar of the cataract can be heard for twenty miles. Below the Falls, the river turning to the southeast, pursues its maddened career for twenty-five miles shut in by vertical cliffs of gneissic rock, which rises in places to a height of four hundred feet. The rocky banks above and below the Falls are thickly wooded with firs and spruces, among which the graceful form of the white birch appears in places.

[The Falls were photographed from several points of view, and carefully measured, the vertical descent proving to be over three hundred feet, while the chute or rapid at their head made a farther descent of thirty-two feet.]

The deep, incessant roar of the cataract that night was our lullaby as, stretched out under a rough "barricade," we glided into that realm of forgetfulness where even surroundings strange as ours counted as naught.

By the morning light we again viewed the wonders of the place, and sought for some sign of the presence of bird or animal in the vicinity ; but not a track or the glint of a bird's wing rewarded our quest, and this avoidance of the place by the wild creatures of the forest seemed to add a new element of severity to the eternal loneliness of the spot.

The Grand Falls of Labrador, with their grim environment of time-worn, archaic rocks, are one of the scenic wonders of this Western world, and if nearer civilization, would be visited by thousands of travellers every year. They are nearly twice as high as Niagara, and are only inferior to that marvellous cataract in breadth and volume of water. One of their most striking characteristics is the astonishing leap into space which the torrent makes in discharging itself over its rocky barrier. From the description given of the rapid drop in the river-bed and coincident narrowing of the channel, one can easily understand that the cumulative energy expended in this final leap of the pent-up waters is truly titanic.

If a substratum of softer rock existed here, as at Niagara, a similar "Cave of the Winds" would enable one to penetrate a considerable distance beneath the fall. The uniform structure of the rock, however, prevents any unequal disintegration, and thus the overarching sheet of water covers a nearly perpendicular wall, the base of which is washed by the waters of the lower river. In spite of the fact that no creature, except one with wings, could hope to penetrate this subaqueous chamber, the place is inhabited, if we are to believe the traditions of the Lab-

rador Indians. Many years ago, so runs the tale, two Indian maidens, gathering firewood near the Falls, were enticed to the brink and drawn over by the evil spirit of the place. During the long years since then, these unfortunates have been condemned to dwell beneath the fall and forced to toil daily dressing deer-skins; until now, no longer young and beautiful, they can be seen betimes through the mist, trailing their white hair behind them and stretching out shrivelled arms towards any mortal who ventures to visit the confines of their mystic dwelling-place.

The Indian name for the Grand Falls—*Pat-ses-che-wan*—means “The Narrow Place where the Water Falls.” Like the native word *Niagara*,—“Thunder of Waters,”—this Indian designation contains a poetic and descriptive quality which it would be hard to improve.

From the point where the river leaves the plateau and plunges into the deep pool below the Falls, its course for fifteen miles is through one of the most remarkable cañons in the world. From the appearance of the sides of this gorge, and the zigzag line of the river, the indications are that the stream has slowly forced its way through this rocky chasm, cutting its way back, foot by foot, from the edge of the plateau to the present position of the Falls. Recent investigators estimate that a period of six thousand years was required to form the gorge below Niagara Falls; or, in other words, that it has taken that time for the Falls to recede from their former position at Queenstown Heights to their present location. If it has taken this length of time for the Niagara Falls to make their way back a distance of seven miles by the erosive power of the water acting on a soft shale rock supporting a stratum of limestone, the immensity of time involved by assuming that the Grand River cañon was formed in the same way is so

great that the mind falters in contemplating it, especially when it is recognized that the escarpment of the Labrador Falls is of hard gneissic rock. And yet no other explanation of the origin of this gorge is acceptable, unless, indeed, we can assume that at some former time a fissure occurred in the earth's crust as a result of igneous agencies, and that this fissure ran in a line identical with the present course of the river; in which case the drainage of the table-land, collecting into the Grand River, would follow the line of least resistance, and in the course of time excavate the fissure into the present proportions of the gorge.

LIFE AMONG THE ESQUIMAUX.

WILLIAM EDWARD PARRY.

[The attempt to find a northwest passage from the Atlantic to the Pacific, by which commerce might make its way round the continent of North America, occupied the attention of navigators from the voyage of Henry Hudson, in 1610, to that of McClure, in 1850; the latter proving that such a passage existed, but that it was impracticable for commerce. Among those engaged in this enterprise one of the most notable was Captain Parry, from whose interesting journal of his voyage (1821-25) the following selection is taken, descriptive of experiences at Gore Bay, where the ships of the expedition had lain all winter in the ice.]

ON the 2d of April a thin sheet of bay-ice several miles square had formed on the sea to the eastward and southward, where for two or three days past there had been a space of open water. This was occasioned more by the wind remaining very moderate and the neap tides occurring about this time than from any great degree of cold, the thermometer seldom falling below -6° or -7° . The

wind, however, settling in the southeast to-day, the main body of ice, which had been scarcely visible in the offing, soon began to move inshore, forcing before it the young floe and squeezing it up into innumerable hummocks, which presently, being cemented together by a fresh formation in their interstices, constituted an example of one of the ways in which these "hummocky floes" are produced, of which I have before so often had occasion to speak. We were always glad to see this squeezing process take place while the ice was still thin enough to admit of it, as it thus became compressed perhaps into one-fiftieth part of the compass that it would otherwise have occupied, and of course left so much the more open space upon the surface of the sea. The temperature of the water at the bottom in eight fathoms was to-day 28° , being the same as that of the surface.

Early in the morning the Esquimaux had been observed in motion at the huts, and several sledges drawn by dogs and heavily laden went off to the westward. On going out to the village, we found one-half of the people had quitted their late habitations, taking with them every article of their property, and had gone over the ice, we knew not where, in quest of more abundant food. The wretched appearance which the interior of the huts now presented baffles all description. In each of the larger ones some of the apartments were either wholly or in part deserted, the very snow which composed the beds and fireplaces having been turned up, so that no article might be left behind. Even the bare walls, whose original color was scarcely perceptible for black, blood, and other filth, were not left perfect, large holes having been made in the sides and roofs for the convenience of handing out the goods and chattels. The sight of a deserted habitation is at all times calculated to excite in the mind a sensation of dreariness and desola-

tion, especially when we have lately seen it filled with cheerful inhabitants; but the feeling is even heightened rather than diminished when a small portion of these inhabitants remain behind to endure the wretchedness which such a scene exhibits. This was now the case at the village, where, though the remaining tenants of each hut had combined to occupy one of the apartments, a great part of the bed-places were still bare, with the wind and drift blowing in through the holes which they had not yet taken the trouble to stop up. The old man Hikkeeira and his wife occupied a hut by themselves, without any lamp or a single ounce of meat belonging to them, while three small skins, on which the former was lying, were all that they possessed in the way of blankets. Upon the whole, I never beheld a more miserable spectacle, and it seemed a charity to hope that a violent and constant cough with which the old man was afflicted would speedily combine with his age and infirmities to release him from his present sufferings. Yet in the midst of all this he was even cheerful, nor was there a gloomy countenance to be seen at the village.

Almost all the men were out, and some of them had been led so far to sea upon the floating and detached masses of ice in pursuit of walruses that Captain Lyon, who observed their situation from the ships, had it in contemplation, in the course of the evening, to launch one of the small boats to go to their assistance. They seemed, however, to entertain no apprehension themselves, from confidence, perhaps, that the southeast wind might be depended upon for keeping the ice close home upon the shore. It is certain, notwithstanding, that no degree of precaution, nor any knowledge of the winds and tides, can render this otherwise than a most perilous mode of obtaining subsistence; and it was impossible, therefore, not to admire the fearlessness as well

as dexterity with which the Esquimaux invariably pursued it.

Having distributed some bread-dust among the women, we told old Illumea and her daughter Togolat that we proposed taking up our lodging in their hut for the night. It is a remarkable trait in the character of these people that they all always thank you heartily for this as well as for eating any of their meat, but both board and lodging may be given to *them* without receiving the slightest acknowledgment either in word or deed. As it was late before the men returned, I asked Togolat to get the rest of the women to perform some of their games, with the hope of seeing something that was new. I had scarcely time to make the proposal when she darted out of the hut and quickly brought every female that was left at the village, not excepting even the oldest of them, who joined in the performance with the same alacrity as the rest. I could, however, only persuade them to go through a tedious song we had often before heard, which was now indeed somewhat modified by their insisting on our taking turns in the performance, all which did not fail to create among them never-ceasing merriment and laughter. Neither their want of food and fuel, nor the uncertain prospect of obtaining any that night, were sufficient to deprive these poor creatures of that cheerfulness and good humor which it seems at all times their peculiar happiness to enjoy.

The night proved very thick with small snow, and as disagreeable and dangerous for people adrift upon floating ice as can well be imagined. If the women, however, gave their husbands a thought or spoke of them to us, it was only to express a very sincere hope that some good news might shortly arrive of their success. Our singing party had not long been broken up when it was suddenly announced by one of the children, the usual heralds on such

occasions, that the men had killed something on the ice. The only two men who were at home instantly scrambled on their outer jackets, harnessed their dogs, and set off to assist their companions in bringing home the game, while the women remained for an hour in anxious suspense as to the extent of their husbands' success. At length one of the men arrived with the positive intelligence of two walruses having been taken, and brought with him a portion of these huge animals as large as he could drag over the snow.

If the women were only cheerful before, they were now absolutely frantic. A general shout of joy instantly re-echoed through the village; they ran into each other's huts to communicate the welcome intelligence, and actually hugged one another in an ecstasy of delight by way of congratulation. One of them, Arnalooă, a pretty young woman of nineteen or twenty, knowing that a dog belonging to her husband was still at the huts, and that there was no man to take him down on the ice, ran out instantly to perform that office; and, with a hardiness not to be surpassed by any of the men, returned after two hours' absence, with her load of walrus-flesh, and without even the hood thrown over her head to protect her from the inclemency of the weather.

When the first burst of joy had at length subsided, the women crept one by one into the apartment where the first portion of the sea-horses had been conveyed, and which is always that of one of the men immediately concerned in the killing of them. Here they obtained blubber enough to set all their lamps alight, besides a few scraps of meat for their children and themselves. From this time, which was nine o'clock, till past midnight fresh cargoes were continually arriving, the principal part being brought in by the dogs, and the rest by the men, who, tying the thong

which held it round their waist, dragged in each his separate portion. Before the whole was brought in, however, some of them went out three times to the scene of action, though the distance was a mile and a half.

Every lamp now swimming with oil, the huts exhibited a blaze of light, and never was there a scene of more joyous festivity than while the operation of cutting up the walrus continued. I took the opportunity which their present good humor afforded to obtain a perfect head and tusks of one of these animals, which we had not been able to do before; and indeed, so much were their hearts opened by the scene of abundance before them, that I believe they would have given us anything we asked for. This disposition was considerably increased, also, by their taking it into their heads that their success was in some way or other connected with, or even owing to, our having taken up our night's lodging at the huts.

After viewing all this festivity for some time, I felt disposed to rest, and wrapping myself up in my fur coat, laid down on one of the beds which Illumea had given up for our accommodation, as well as her *kēipik*, or large deer-skin blanket, which she had rolled up for my pillow. The poor old woman herself sat up by her lamp, and in that posture seemed perfectly well satisfied to doze away the night. The singularity of my night's lodging made me awake several times, when I always found some of the Esquimaux eating, though after we lay down they kept quiet for fear of disturbing us. Mr. Halse, who was still more wakeful, told me that some of them were incessantly employed in this manner for more than three hours. Indeed, the quantity of meat that they thus contrive to get rid of is almost beyond belief.

Having at length enjoyed a sound nap, I found on awaking about five o'clock that the men were already up,

and had gone out to resume their labors on the ice, so that several of them could not have rested more than two or three hours. This circumstance served to correct a notion we had entertained, that when once abundantly supplied with food they took no pains to obtain more till want began again to stare them in the face. It was now more pleasing to be assured that, even in the midst of plenty, they did not indolently give themselves up to repose, but were willing to take advantage of every favorable opportunity of increasing their store. It is certain, indeed, that were these people more provident (or, in other words, less gluttonous, for they do not waste much), they might never know what it is to want provisions, even during the most inclement part of the year. The state of the ice was to-day very unfavorable for their purpose, being broken into pieces so small that they could scarcely venture to walk upon it. . . .

The morning of the 5th proved favorable for a journey I had in contemplation to the distant huts, to which Iligliuk, who had come to Winter Island the day before, promised to be my guide. At six o'clock I set out, accompanied by Mr. Bushman and two of the men, carrying with us a supply of bread-dust, besides our own provisions and blankets. As the distance was too great for her son Sioutkuk to walk, we were uncertain till the moment of setting out how this was to be managed, there being no sledge at hand for the purpose. We found, however, that a man, whom we had observed for some time at work among the hummocks of ice upon the beach, had been employed in cutting out of that abundant material a neat and serviceable little sledge, hollowed like a bowl or tray out of a solid block, and smoothly rounded at the bottom. The thongs to which the dogs were attached were secured to a groove cut around its upper edge; and the young seal-

catcher, seated in this simple vehicle, was dragged along with great convenience and comfort.

The ice over which we travelled was a level floe that had never suffered disturbance since its first formation in the autumn, and with not more than an inch and a half of snow upon it. The path being distinctly marked out by the people, sledges, and dogs that had before travelled upon it, one might, without any great stretch of the imagination, have almost fancied it a road leading over a level and extensive heath towards a more civilized and substantial village than that which we were now approaching. Ilig-liuk walked as nimbly as the best of us; and after two hours and a half brisk travelling we arrived at the huts, and were received by the women (for all the men were absent) with every expression of kindness and welcome. Each was desirous of affording us lodging, and we had speedily arranged matters so as to put them to the least possible inconvenience.

These huts, four in number, were in the mode of their construction exact counterparts of those at Winter Island on our first visit, but, being now new and clean, presented a striking contrast with the latter, in their present disordered and filthy state. What gave a peculiarity, as well as beauty also, to the interior appearance of these habitations, was their being situated on the ice, which, being cleared of the snow, presented a flooring of that splendid blue which is, perhaps, one of the richest colors that nature affords. A seal or two having been lately procured, every lamp was now blazing, and every *ootkōoseĕk* smoking with a hot mess which, together with the friendly reception we experienced and a little warmth and fatigue from travelling, combined in conveying to our minds an idea of comfort which we could scarcely believe an Esquimaux hut capable of exciting.

On the arrival of the men, who came in towards evening, with two seals as the reward of their labor, we were once more greeted and welcomed. Arnaneelia in particular, who was a quiet, obliging, and even amiable, man, was delighted to find that my quarters were to be in his apartment, where Aneetka, his wife, a young woman of about twenty-three, had already arranged everything for my accommodation; and both these poor people now vied with each other in their attention to my comfort. The other two apartments of the same hut were occupied by Kaoongut and Okotook, with their respective wives and families, it being the constant custom of these people thus to unite in family groups whenever the nature of their habitations will allow it. Mr. Bushman being established with Okotook, and the two men with Kaoongut, we were thus all comfortably lodged under the same roof. . . .

On the 22d a number of the Esquimaux came to the ships with a sledge, and among the rest my late host Arnaneelia and his wife, the latter having the front of her jacket adorned with numberless strings of beads that we had given her, arranged with exact uniformity, to which, in the fashion of their dresses and the disposition of their ornaments, these people always rigidly adhere. Aneetka had scarcely reached the cabin when she produced a little ivory comb and a pair of handsome mittens, which she presented to Mr. Edwards, at the same time thanking him for the attention he had shown her on an occasion when she had been taken in a fit alongside the "Fury," from which she was recovered by bleeding. This expression of gratitude, in which she was heartily joined by her husband, was extremely gratifying to us, as it served in some degree to redeem these people in our estimation from the imputation of ingratitude which is indeed one of their greatest failings.

They stated having seen two reindeer the preceding day going over the ice to the mainland. They spoke of this with great pleasure, and we were ourselves not displeased with the prospect of changing our diet for a little venison. They now became extremely urgent with us for wood to make bows and arrows, most of their own having, with the childishness that accompanied their first barterings, been parted with to our officers and men. Having several broken oars which could be turned to little or no account on board, we were enabled, at a small expense of useful stores, to furnish them very abundantly with wood for this purpose. Arnaneelia also informed us that Okotook, who had been unwell for some days, was now much worse, and seemed, as he described it, to be laboring under a violent pulmonary complaint. On the circumstance being mentioned to Mr. Skeoch, he kindly volunteered to go to the village, and accordingly took his seat on the sledge, accompanied also by Mr. Sherer. They carried with them a quantity of bread-dust to be distributed among the Esquimaux at the huts, their success in seal-catching having lately been indifferent. . . .

In digging up the piece of ground for our garden, we found an incredible quantity of bones scattered about and concealed under the little soil there was. They were principally those of walruses and seals, and had evidently been left a long time before by Esquimaux, in the course of their wandering visits to the island, being gradually covered by the vegetable mould formed upon the spot which they helped to fertilize. Afterwards, when the land became more clear of snow, this was found to be the case to a much greater extent, every spot of ground upon the south-east point, which was not absolutely a rock, being covered with these relics. Some graves were also discovered, in one of which were a human skull, apparently a hundred

years buried, and some pieces of wood that had probably been parts of spears or arrows almost mouldered to dust. Knowing as we do the antiseptic properties of this climate, animal or vegetable substances in this state of decay convey to the mind an idea of much greater age than they would in any other part of the world.

[Escape from their winter quarters was not accomplished till the 1st of July, they having been for nine months frozen in the ice.]

FUGITIVES FROM THE ARCTIC SEAS.

ELISHA KENT KANE.

[Of all works of travel in the Arctic seas, none have attracted more attention than Dr. Kane's "Arctic Explorations," an attractively written journal of hardship and adventure that had the interest of a romance to most readers. The expedition ended in the enforced abandonment of the ship and a long boat journey over the ice, in which the adventurers experienced many perils and suffered much from hunger. We give the concluding incidents of this journey.]

It was the 18th of July before the aspects of the ice about us gave me hope of progress. We had prepared ourselves for the new encounter with the sea and its trials by laying in a store of lumme [an Arctic bird], two hundred and fifty of which had been duly skinned, spread open, and dried on the rocks as the *entremets* of our bread-dust and tallow.

My journal tells of disaster in its record of our setting out. In launching the "Hope" from the frail and perishing ice-wharf on which we found our first refuge from the gale, she was precipitated into the sludge below, carrying away rail and bulwark, losing overboard our best shot-gun, Bon-

sall's favorite, and, worst of all, that universal favorite, our kettle,—soup-kettle, paste-kettle, tea-kettle, water-kettle, in one. I may mention before I pass that the kettle found its substitute and successor in the remains of a tin can which a good aunt of mine had filled with ginger-nuts two years before, and which had long survived the condiments that once gave it dignity. "Such are the uses of adversity."

Our descent to the coast followed the margin of the fast ice. After passing the Crimson Cliffs of Sir John Ross it wore almost the dress of a holiday excursion,—a rude one, perhaps, yet truly one in feeling. Our course, except where a protruding glacier interfered with it, was nearly parallel to the shore. The birds along it were rejoicing in the young summer, and when we halted it was upon some green-clothed cape near a stream of water from the ice-fields above. Our sportsman would clamber up the cliffs and come back laden with little auks; great generous fires of turf, that cost nothing but the toil of gathering, blazed merrily; and our happy oarsmen, after a long day's work, made easy by the promise ahead, would stretch themselves in the sunshine and dream happily away till called to the morning wash and prayers. We enjoyed it the more, for we all of us knew that it could not last.

This coast must have been a favorite region at one time with the natives,—a sort of Esquimaux Eden. We seldom encamped without finding the ruins of their habitations, for the most part overgrown with lichens, and exhibiting every mark of antiquity. One of these, in latitude $76^{\circ} 20'$, was once, no doubt, an extensive village. Cairns for the safe deposit of meat stood in long lines, six or eight in a group; and the huts, built of large rocks, faced each other, as if disposed on a street or avenue.

The same reasoning which deduces the subsidence of the coast from the actual base of the Temple of Serapis, proves

that the depression of the Greenland coast, which I had detected as far north as Upernavik, is also going on up here. Some of these huts were washed by the sea or torn away by the ice that had descended with the tides. The turf, too, a representative of very ancient growth, was cut even with the water's edge, giving sections two feet thick. I had not noticed before such unmistakable evidence of the depression of this coast: its converse elevation I had observed to the north of Wostenholme Sound. The axis of oscillation must be somewhere in the neighborhood of latitude 77° .

We reached Cape York on the 21st, after a tortuous but romantic travel through a misty atmosphere. Here the land-leads ceased, with the exception of some small and scarcely practicable openings near the shore, which were evidently owing to the wind that prevailed for the time. Everything bore proof of the late development of the season. The red snow was a fortnight behind its time. A fast floe extended with numerous tongues far out to the south and east. The only question was between a new rest, for the shore-ices to open, or a desertion of the coast and a trial of the open water to the west.

[They had at this time but thirty-six pounds of food per man and fuel enough to last them three weeks.]

I climbed the rocks a second time with Mr. McGary, and took a careful survey of the ice with my glass. The "fast," as the whalers call the immovable shore-ice, could be seen in a nearly unbroken sweep, passing by Bushnell's Island, and joining the coast not far from where I stood. The outside floes were large, and had evidently been not long broken; but it cheered my heart to see that there was one well defined lead which followed the main floe until it lost itself to seaward.

I called my officers together, explained to them the motives which governed me, and prepared to re-embark. The boats were hauled up, examined carefully, and, as far as our means permitted, repaired. The "Red Eric" was stripped of her outfit and cargo, to be broken up for fuel when the occasion should come. A large beacon-cairn was built on an eminence, open to view from the south and west, and a red flannel shirt, spared with some reluctance, was hoisted as a pennant to draw attention to the spot. Here I deposited a succinct record of our condition and purposes, and then directed our course south by west into the ice-fields.

By degrees the ice through which we were moving became more and more impacted, and it sometimes required all our ice-knowledge to determine whether a particular lead was practicable or not. The irregularities of the surface, broken by hummocks, and occasionally by larger masses, made it difficult to see far ahead, besides which we were often embarrassed by the fogs. I was awakened one evening from a weary sleep in my fox-skins to discover that we had fairly lost our way. The officer at the helm of the leading boat, misled by the irregular shape of a large iceberg that crossed his track, had lost the main lead some time before, and was steering shoreward, far out of the true course. The little canal in which he had locked us was hardly two boats' lengths across, and lost itself not far off in a feeble zigzag both behind and before us; it was evidently closing, and we could not retreat.

Without apprising the men of our misadventure, I ordered the boats hauled up, and, under pretence of drying the clothing and stores, made a camp on the ice. A few hours after the weather cleared enough for the first time to allow a view of the distance, and McGary and myself climbed a berg some three hundred feet high for the pur-

pose. It was truly fearful; we were deep in the recesses of the bay, surrounded on all sides by stupendous icebergs and tangled floe-pieces. My sturdy second officer, not naturally impressible, and long accustomed to the vicissitudes of whaling life, shed tears at the prospect.

There was one thing to be done: cost what it might, we must harness our sledges again and retrace our way to the westward. One sledge had been already used for firewood; the "Red Eric," to which it had belonged, was now cut up, and her light cedar planking laid upon the floor of the other boats, and we went to work with the rue-raddies as in the olden time. It was not till the third toilsome day was well spent that we reached the berg that had bewildered our helmsman. We hauled over its tongue and joyously embarked again upon a free lead, with a fine breeze from the north.

Our little squadron was now reduced to two boats. The land to the northward was no longer visible, and whenever I left the margin of the fast to avoid its deep sinuosities, I was obliged to trust entirely to the compass. We had at least eight days' allowance of fuel on board; but our provisions were running very low, and we met few birds, and failed to secure any larger game. We saw several large seals upon the ice, but they were too watchful for us; and on two occasions we came upon the walrus sleeping, once within actual lance-thrust; but the animal charged in the teeth of his assailant and made good his retreat.

On the 28th I instituted a quiet review of the state of things before us. Our draft on the stores we had laid in at Providence Halt had been limited for some days to three raw eggs and two breasts of birds a day, but we had a small ration of bread-dust besides; and when we halted, as we did regularly for meals, our fuel allowed us to indulge lavishly in the great panacea of Arctic travel, tea. The



IN THE POLAR ICE.

men's strength was waning under this restricted diet, but a careful reckoning up of our remaining supplies proved to me now that even this was more than we could afford ourselves without an undue reliance on the fortunes of the hunt. Our next land was to be Cape Shackleton, one of the most prolific bird-colonies of the coast, which we were all looking to, much as sailors nearing home in their boats after disaster and short allowance at sea. But, meting out our stores through the number of days that must elapse before we could expect to share its hospitable welcome, I found that five ounces of bread-dust, four of tallow, and three of bird-meat must from this time form our daily ration.

So far we had generally coasted the fast ice ; it had given us an occasional resting-place and refuge, and we were able sometimes to reinforce our stores of provisions by our guns. But it made our progress tediously slow, and our stock of small shot was so nearly exhausted that I was convinced our safety depended on increase of speed. I determined to try the more open sea.

For the first two days the experiment was a failure. We were surrounded by heavy fogs ; a southwest wind brought the outside pack upon us, and obliged us to haul up on the drifting ice. We were thus carried to the northward, and lost about twenty miles. My party, much overworked, felt despondingly the want of the protection of the land-floes.

Nevertheless, I held to my purpose, steering south-south-west as nearly as the leads would admit, and looking constantly for the thinning out of the pack that hangs around the western water.

Although the low diet and exposure to wet had again reduced our party, there was no apparent relaxation of energy, and it was not until some days later that I found their strength seriously giving way.

It is a little curious that the effect of a short allowance of food does not show itself in hunger. The first symptom is a loss of power, often so imperceptibly brought on that it becomes evident only by an accident. I well remember our look of blank amazement as, one day, the order being given to haul the "Hope" over a tongue of ice, we found she would not budge. At first I thought it was owing to the wetness of the snow-covered surface in which her runners were; but, as there was a heavy gale blowing outside, and I was extremely anxious to get her on to a larger floe to prevent being drifted off, I lightened her cargo and set both crews upon her. In the land of promise off Crimson Cliffs such a force would have trundled her like a wheelbarrow: we could almost have borne her upon our backs. Now with incessant labor and standing hauls she moved at a snail's pace.

The "Faith" was left behind and barely escaped destruction. The outside pressure cleft the floe asunder, and we saw our best boat with all our stores drifting rapidly away from us. The sight produced an almost hysterical impression upon our party. Two days of want of bread, I am sure, would have destroyed us; and we had now left us but eight pounds of shot in all. To launch the "Hope" again, and rescue her comrade or share her fortunes, would have been the instinct of other circumstances; but it was out of the question now. Happily, before we had time to ponder our loss a flat cake of ice eddied round near the floe we were upon; McGary and myself sprang to it at the moment, and succeeded in floating it across the chasm in time to secure her. The rest of the crew rejoined her only by scrambling over the crushed ice as we brought her in at the hummock-lines.

Things grew worse and worse with us; the old difficulty of breathing came back again, and our feet swelled to such

an extent that we were obliged to cut open our canvas boots. But the symptom which gave me most uneasiness was our inability to sleep. A form of low fever which hung by us when at work had been kept down by the thoroughness of our daily rest; all my hopes of escape were in the refreshing influences of the halt.

It must be remembered that we were now in the open bay, in the full line of the great ice-drift to the Atlantic, and in boats so frail and unseaworthy as to require constant baling to keep them afloat.

It was at this crisis of our fortunes that we saw a large seal floating—as is the custom of these animals—on a small patch of ice, and seemingly asleep. It was an ussuk, and so large that I at first mistook it for a walrus. Signal was made for the “Hope” to follow astern, and, trembling with anxiety, we prepared to crawl down upon him.

Petersen, with the large English rifle, was stationed in the bow, and stockings were drawn over the oars as mufflers. As we neared the animal our excitement became so intense that the men could hardly keep stroke. I had a set of signals for such occasions which spared us the noise of the voice; and when about three hundred yards off the oars were taken in, and we moved in deep silence with a single scull astern.

He was not asleep, for he reared his head when we were almost within rifle-shot; and to this day I can remember the hard, careworn, almost despairing expression of the men's thin faces as they saw him move; their lives depended on his capture.

I depressed my hand nervously, as a signal for Petersen to fire. McGary hung upon his oar, and the boat, slowly but noiselessly sagging ahead, seemed to me within certain range. Looking at Petersen, I saw that the poor fellow was paralyzed by his anxiety, trying vainly to obtain a

rest for his gun against the cut-water of the boat. The seal rose on his fore-flippers, gazed at us for a moment with frightened curiosity, and coiled himself for a plunge. At that instant, simultaneously with the crack of our rifle, he relaxed his long length on the ice, and, at the very brink of the water, his head fell helpless to one side.

I would have ordered another shot, but no discipline could have controlled the men. With a wild yell, each vociferating according to his own impulse, they urged both boats upon the floes. A crowd of hands seized the seal and bore him up to safer ice. The men seemed half crazy; I had not realized how much we were reduced by absolute famine. They ran over the floe crying and laughing and brandishing their knives. It was not five minutes before every man was sucking his bloody fingers or mouthing long strips of raw blubber.

Not an ounce of this seal was lost. The intestines found their way into the soup-kettles without any observances of the preliminary home processes. The cartilaginous parts of the fore-flippers were cut off in the *mêlée* and passed round to be chewed upon; and even the liver, warm and raw as it was, bade fair to be eaten before it had seen the pot. That night, on the large halting floe, to which, in contempt of the dangers of drifting, we happy men had hauled our boats, two entire planks of the "Red Eric" were devoted to a grand cooking-fire, and we enjoyed a rare and savage feast.

This was our last experience of the disagreeable effects of hunger. In the words of George Stephenson, "The charm was broken, and the dogs were safe." The dogs I have said little about, for none of us liked to think of them. The poor creatures Toodla and Whitey had been taken with us as last resources against starvation. They were, as McGary worded it, "meat on the hoof," and "able to

carry their own fat over the floes." Once, near Weary Man's Rest, I had been on the point of killing them; but they had been the leaders of our winter's team, and we could not bear the sacrifice.

I need not detail our journey any farther. Within a day or two we shot another seal, and from that time forward had a full supply of food. . . . Two days after this, a mist had settled down upon the islands which embayed us, and when it lifted we found ourselves rowing in lazy time, under the shadow of Karkamoot. Just then a familiar sound came to us over the water. We had often listened to the screeching of the gulls or the bark of the fox and mistaken it for the "Huk" of the Esquimaux, but this had about it an inflection not to be mistaken, for it died away in the familiar cadence of an "halloo."

"Listen, Petersen! Oars, men!" "What is it?" and he listened quietly at first, and then, trembling, said in a half-whisper, "Dannemarkers!"

I remember this, the first tone of Christian voice which had greeted our return to the world. How we all stood up and peered into the distant nooks; and how the cry came to us again, just as, having seen nothing, we were doubting whether the whole was not a dream; and then how, with long sweeps, the white ash cracking under the spring of the rowers, we stood for the cape that the sound proceeded from, and how nervously we scanned the green spots which our experience, grown now into instinct, told us would be the likely camping-ground of wayfarers.

By and by—for we must have been pulling a good half-hour—the single mast of a small shallop showed itself; and Petersen, who had been very quiet and grave, burst into an incoherent fit of crying, only relieved by broken exclamations of mingled Danish and English. "'Tis the Upernavik oil-boat! The 'Fräulein Flaischer!' Charlie

Mossyn, the assistant cooper, must be on his road to Kingatok for blubber. The 'Mariane' (the one annual ship) has come, and Carlie Mossyn——" and here he did it all over again, gulping down his words and wringing his hands.

It was Carlie Mossyn, sure enough. The quiet routine of a Danish settlement is the same year after year, and Petersen had hit upon the exact state of things. The "Mariane" was at Proven, and Carlie Mossyn had come up in the "Fräulein Flaischer" to get the year's supply of blubber from Kingatok.

RESCUED FROM DEATH.

W. S. SCHLEY.

[In the whole history of Arctic exploration there is no story more replete with the elements of tragedy than that of Lieutenant A. W. Greely and his brave companions. Sailing to the far north in 1881 on a scientific expedition, misfortune overtook the party, largely due to the failure of the relief expeditions of 1882 and 1883 to reach them. The imperilled navigators left their vessel and made their way down the coast, suffering terribly from cold and hunger, and were in the throes of starvation when finally rescued by the relief expedition of 1884. Many of them had already died, and but a perishing remnant was left when they were at length discovered in their final place of refuge. The story of their discovery and rescue, as told by Commander W. S. Schley and Professor J. R. Soley, in their "Rescue of Greely," is tragically dramatic, and we make it the subject of our present selection. The relief vessels, the "Thetis" and the "Bear," examining the coast in the vicinity of Cape York, found that there was no trace of the sufferers at Littleton Island. Thence they made their way to Brevoort Island, near Cape Sabine, and from there sent out four parties to examine the coast in different directions.]

It was intended that, as soon as a satisfactory examination had been made and a depot landed, the ships should

advance without delay into Kane Sea. There was no expectation of finding that any one had been at the cape, or that the cairns or caches had been disturbed, as it was clear that if Greely had arrived he would have been short of provisions, and would therefore have sought to obtain those at Littleton Island; and nobody could have imagined for a moment that with prospective starvation on one side of the strait, and a provision depot (although a small one) twenty-three miles off on the other, a party supplied with a boat and oars would have preferred the former alternative. In fact, at the time the cutter started, the crew of the "Bear" were getting provisions on deck, to be in readiness for the sledge journey that was to be made northward, after the ships were stopped by the fast ice. As the cutter left the ship, Colwell picked up a can of hard-tack and two one-pound cans of pemmican, as he thought that his party might be out all night, and a little of something to eat would not go amiss.

Within half an hour after the first parties had left the ship cheers were heard above the roaring of the wind. At first it was impossible to tell from what quarter the sound proceeded, but soon the cheering was heard a second time more distinctly, in the direction of Brevoort Island. Almost immediately after, Ensign Harlow was observed signalling from Stalknecht Island. His message read, "Have found Greely's record; send five men."

Before this request could be carried out, Yewell was seen running over the ice towards the ships, and a few minutes later he came on board, almost out of breath, with the information that Lieutenant Taunt had found a message from Greely in the cairn on Brevoort Island. Yewell brought the papers with him, and called out, as he gave them to the officer of the deck, that Greely's party were at Cape Sabine, all well. The excitement of the moment was

intense, and it spread with the rapidity of lightning through both the ships. It was decided instantly to go on to the Cape, and a general recall was sounded by three long blasts from the steam-whistle of the "Thetis."

The first thing to be done before taking definite action was to go carefully over the papers that Taunt had found. All the officers who had remained behind in the two ships gathered around the wardroom table of the "Thetis," and the records were hurriedly read aloud. As one paper after another was quickly turned over, until the last was reached, it was discovered with horror that the latest date borne by any of them was October 21, 1883, and that but forty days' complete rations were left to live upon. Eight months had elapsed since then, and the belief was almost irresistible that the whole party must have perished during this terrible period of waiting and watching for relief. . . .

It was a wonderful story. It told how the expedition, during its two years at Lady Franklin Bay, had marked out the interior of Grinnell Land, and how Lockwood had followed the northern shore of Greenland, and had reclaimed for America the honor of "the farthest north." But there was no time now to think of what the expedition had accomplished; that was already a matter of history. The pressing question was, Where was Greely's party now? and to that question it was too probable that there was but one answer.

The records had named the wreck-cache as the site of Greely's camp, and preparations were made at once to go there. The cutter, with Colwell and his party on board, had not yet got away, having been stopped by the cries from the shore, and she now steamed back under the stern of the "Thetis." Colwell was directed to go to the site of the cache and look for the explorers; and if any were alive,—of which the record gave little hope,—to tell them that

relief was close at hand. As he was about to leave, he called out for a boat-flag, and one was thrown to him from the ship. This was bent on a boat-hook and set up in the stern of the boat.

Before the cutter had disappeared to the northward the commander of the expedition had gone on board the "Bear," and the ship was under way, following the track of the cutter around the cape. The detachment under Harlow, which had found Greely's scientific records and instruments on Stalknecht Island, and the other party under Melville, some of whom had not yet returned, were to come after in the "Thetis," which was left behind to pick them up. The passage which the ships and the cutter were to make was about six miles, although from Payer Harbor to the wreck-cache, in a straight line, across the rugged neck of intervening land, it was less than half that distance. Fortunately, the southerly gale had set the ice off shore into Kane Sea, leaving a clear passage around for the vessels.

It was half-past eight o'clock in the evening as the cutter steamed around the rocky bluff of Cape Sabine and made her way to the cove, four miles farther on, which Colwell remembered so well from his hurried landing with the stores on the terrible night following the wreck of the "Proteus." The storm, which had been raging with only slight intervals since early the day before, still kept up, and the wind was driving in bitter gusts through the openings in the ridge that followed the coast to the westward. Although the sky was overcast, it was broad daylight,—the daylight of a dull winter afternoon,—and as the cutter passed along, Colwell could recognize the familiar landmarks of the year before; the long sweep of the rocky coast, with its ice-foot spanning every cove, the snow gathered in the crevices, the projecting headlands, and the line

of the ice-pack which had ground up the "Proteus," dimly seen in the mists to the north, across the tossing waters of Kane Sea. At last the boat arrived at the site of the wreck-cache, and the shore was eagerly scanned, but nothing could be seen. Rounding the next point, the cutter opened out the cove beyond. There, on the top of a little ridge, fifty or sixty yards above the ice-foot, was plainly outlined the figure of a man. Instantly the coxswain caught up the boat-hook and waved his flag. The man on the ridge had seen them, for he stooped, picked up a signal-flag from the rock, and waved it in reply. Then he was seen coming slowly and cautiously down the steep rocky slope. Twice he fell down before he reached the foot. As he approached, still walking feebly and with difficulty, Colwell hailed him from the bow of the boat.

"Who all are there left?"

"Seven left."

As the cutter struck the ice, Colwell jumped off and went up to him. He was a ghastly sight. His cheeks were hollow, his eyes wild, his hair and beard long and matted. His army blouse, covering several thicknesses of shirts and jackets, was ragged and dirty. He wore a little fur cap and rough moccasins of untanned leather tied around the leg. As he spoke, his utterance was thick and mumbling, and in his agitation his jaws worked in convulsive twitches. As the two met, the man, with a sudden impulse, took off his glove and shook Colwell's hand.

"Where are they?" asked Colwell, briefly.

"In the tent," said the man, pointing over his shoulder; "over the hill; the tent is down."

"Is Mr. Greely alive?"

"Yes, Greely's alive."

"Any other officers?"

"No." Then he repeated, absently, "The tent is down."

"Who are you?"

"Long."

Before this colloquy was over Lowe and Norman had started up the hill. Hastily filling his pockets with bread, and taking the two cans of pemmican, Colwell told the coxswain to take Long into the cutter, and started after the others with Ash. Reaching the crest of the ridge, and looking southward, they saw spread out before them a desolate expanse of rocky ground, sloping gradually from a ridge on the east to the ice-covered shore, which at the west made in and formed a cove. Back of the level space was a range of hills rising up eight hundred feet, with a precipitous face, broken in two by a gorge, through which the wind was blowing furiously. On a little elevation directly in front was the tent. Hurrying on across the intervening hollow, Colwell came up with Lowe and Norman just as they were greeting a soldierly-looking man who had come out from the tent.

As Colwell approached, Norman was saying to the man,—
"There is the lieutenant."

And he added to Colwell,—

"This is Sergeant Brainard."

Brainard immediately drew himself up to the position of the soldier, and was about to salute when Colwell took his hand.

At this moment there was a confused murmur within the tent, and a voice said,—

"Who's there?"

Norman answered, "It's Norman,—Norman who was in the 'Proteus.'"

This was followed by cries of "Oh, it's Norman!" and a sound like a feeble cheer.

Meanwhile, one of the relief party, who in his agitation and excitement was crying like a child, was down on his

hands and knees trying to roll away the stones that held down the flapping tent cloth. The tent was a "tepiik," or wigwam tent, with a fly attached. The fly, with its posts and ridge-pole, had been wrecked by the gale which had been blowing for thirty-six hours, and the pole of the tepiik was toppling over, and only kept in place by the guy-ropes. There was no entrance except under the flap opening, which was held down by stones. Colwell called for a knife, cut a slit in the tent-cover, and looked in.

It was a sight of horror. On one side, close to the opening, with his head towards the outside, lay what was apparently a dead man. His jaw had dropped, his eyes were open, but fixed and glassy, his limbs were motionless. On the opposite was a poor fellow, alive to be sure, but without hands or feet, and with a spoon tied to the stump of his right arm. Two others seated on the ground, in the middle, had just got down a rubber bottle that hung on the tent-pole, and were pouring from it into a tin can. Directly opposite, on his hands and knees, was a dark man with a long matted beard, in a dirty and tattered dressing-gown, with a little red skull cap on his head, and brilliant staring eyes. As Colwell appeared, he raised himself a little, and put on a pair of eye-glasses.

"Who are you?" asked Colwell.

The man made no answer, staring at him vacantly.

"Who are you?" again.

One of the men spoke up: "That's the major,—Major Greely."

Colwell crawled in and took him by the hand, saying to him, "Greely, is this you?"

"Yes," said Greely in a faint broken voice, hesitating and shuffling with his words, "yes—seven of us left—here we are—dying—like men. Did what I came to do—beat the best record."

Then he fell back exhausted.

The four men in the tent with Greely were two sergeants, Elison and Fredericks; Bierderbick, the hospital steward; and Private Connell, who, with Brainard and Long, were all that remained of the twenty-five members of the Lady Franklin Bay Expedition. The scene, as Colwell looked around, was one of misery and squalor. The rocky floor was covered with cast-off clothes, and among them were huddled together the sleeping-bags in which the party had spent most of their time during the last few months. There was no food left in the tent but two or three cans of a thin, repulsive-looking jelly, made by boiling strips cut from the seal-skin clothing. The bottle on the tent-pole still held a few teaspoonfuls of brandy, but it was their last, and they were sharing it as Colwell entered; it was evident that most of them had not long to live. . . .

As soon as Colwell understood the condition of affairs, he sent Chief-Engineer Lowe back to the cutter to put off to the "Bear" with Long, to report what had happened, and bring off the others with the surgeon and stimulants. Fredericks and Bierderbick presently got up and came out. Colwell gave them, as well as Greely and Elison, a little of the biscuit he had in his pocket, which they munched slowly and deliberately. Then he gave them another bit, while Norman opened one of the cans of pemmican. Scraping off a little with a knife, Colwell fed them slowly by turns. It was a pitiable sight. They could not stand up and had dropped down on their knees, and held out their hands begging for more. After they had each been fed twice, they were told that they had had enough, that they could not eat more then without danger; but their hunger had now come back with full force, and they begged piteously to be helped again, protesting that it could do them no harm. Colwell was wisely deaf to their entreaties

and threw away the can. When Greely found that he was refused he took out a can of the boiled seal-skin, which had been carefully husbanded, and which he said he had a right to eat, as it was his own. This was taken away from him, but while Colwell was at work trying to raise the tent, some one got the half-emptied can of pemmican, and by the time it was discovered had eaten its contents.

The weaker ones were like children, petulant, rambling and fitful in their talk, absent, and sometimes a little incoherent. While they were waiting for the return of the boat, Colwell and the ice-masters did their best to cheer them up by telling them that relief was at hand, and that the others would soon arrive. They could not realize it, and refused to believe it. So they were humored, and by way of taking up their thoughts, Colwell told them something of what had been going on in the world during their three years of exile. Curiously enough, there was much that they knew already. It turned out that among the stores from the "*Proteus*" were two boxes of lemons, and the fruit had been wrapped up in scraps of English newspapers,—"those lemons which your dear wife put up for us," as one of them said to Colwell in a moment of wandering fancy. The latter could only disclaim the imaginary obligation to an imaginary person, but the impression had already faded.

As Greely complained of cold, Colwell gave him his gloves, and persuaded him to go back to his sleeping-bag. This was lying under the fallen tent-cloth, which the party had been too weak or too discouraged to raise up and disengage. Where the single remaining pole supported the tent there was a clear space of perhaps six feet, just enough for a man to stand upright, but around it the canvas was lying on the ground. The bag, from which Greely had hardly moved for a month, was found under the

canvas, and by the united efforts of the three men the tent was partly raised.

Meanwhile, the "Bear" had arrived and Lowe had gone off in the cutter, taking with him Sergeant Long. Long was too weak to get on board without assistance, and was lifted over the side by some of the crew and taken to a chair in the wardroom. In reply to questions about the party and their condition, Long, in a husky voice, told his story: that all were dead except Greely and five others, who were on shore in "sore distress—sore distress;" that they had had a hard winter, and "the wonder was how in God's name they had pulled through." No words can describe the pathos of this man's broken and enfeebled utterance as he said, over and over, "a hard winter—a hard winter;" and the officers who were gathered about him in the wardroom felt an emotion which most of them were at little pains to conceal. The first sign of the relief expedition which had reached the camp was the sound from the steam whistle of the "Thetis," recalling the shore parties at Payer Harbor. Lieutenant Greely, lying on the ground in his tent, had heard it, as it was borne faintly over the neck of land, but the others had not noticed it in the roaring wind, and when he told them he had heard a steamer's whistle, they thought it only the impression of his disturbed imagination. Long crawled out of the tent and, bracing himself against the wind, struggled up to the ridge; but nothing could be seen but the rocky coast, and the ice-foot, and the chopping sea with the pack stretching off in the distance. It was a bitter disappointment. Long went back disheartened, but after waiting uneasily awhile longer, he mounted the ridge a second time. Still there was nothing to be seen but the same hopeless prospect, and he was about to return again when the cutter came into view around the point above. After all these months of waiting

it was hard to believe that he was not dreaming, but when he saw the coxswain wave the familiar flag, he knew that relief had come at last.

[The conclusion of the story is longer than we have space to give. It will suffice to say that the survivors were gradually brought back to life and health, and that the living and the bodies of the dead alike were brought back to the United States; and that in the robust-appearing General Greely of to-day there is nothing to indicate the terrible strain of that dread winter in the realm of ice.]

THE MUIR GLACIER.

SEPTIMA M. COLLIS.

[No other country in the world possesses so many unique wonders of nature as the United States. The Yosemite Valley, Yellowstone Park, Mammoth Cave, Niagara Falls, and Sequoia Groves each stands alone in its peculiar beauty or grandeur; and to these we may add the Muir Glacier in Alaska, before which the famous glaciers of the Alps shrink into insignificance, and which has no rival outside the Arctic zone. "A Woman's Trip to Alaska," by Mrs. Collis, gives a vivid and picturesque description of this glacial wonder, which we here append. The sketch given is preceded by a statistical one, in which we are told that this glacier sheds from its front "one hundred and sixty million cubic feet of ice every twenty-four hours."]

THE previous chapter has briefly outlined the main facts within my knowledge concerning the Muir Glacier which I had gathered from my reading, and upon which I had to create the image of what I expected to see. True, I had seen photographs of it; yes, and I had photographs of the Cañon of the Yellowstone, and of the Nevada Falls, and of Niagara, just as I have seen paste diamonds; I knew their shapes, and that is all I ever gathered from

their portraits. Neither the expression, nor the complexion, nor the sound of the voice of nature are to be found upon the dull surface of the photograph; you simply get the general lines, some of the shadows, very erroneous perspective, and that is all. We had come to a stand-still while we were at lunch. I had observed the slackening of speed; next the stoppage of the machinery; then the absolute stillness of the ship; and finally a darkening of the saloon. We were evidently at a halt under the shadow of some immense elevation. A passenger on tiptoe looked through the port-hole, and uttered an exclamation of amazement; then we all rushed to similar apertures; climbed on the chairs; looked over the men's shoulders; in fact, did all kinds of unreasonable things, and at last stampeded up the companion-way to the deck.

I pray heaven that neither age nor infirmity may ever efface from my memory the sight and the sensation of that moment. To say that I was transfixed, speechless, fascinated to intoxication by the spell of this marvellous development is no exaggeration. Those who reached the deck first seemed paralyzed, halted, and thus blockaded the way for those who were to follow; others kept within the saloon from choice, as though they dreaded some phenomenal convulsion. I wedged my way as best I could, after the first shock of amazement had subsided, up to the very bow of the ship.

Upon each side of me, half a mile away, rose the same old mountains which I had seen everywhere from Tacoma north; at my feet the same Pacific Ocean, but in front of me, apparently so close that I could almost reach it with my fingers, the perpendicular wall of a cañon, not of rock, nor clay, nor grass, nor forest, but of ice,—a wall of ice a mile in length; and when I say a mile, I mean over eighteen hundred yards of it; and when I speak of ice, I do

not mean the sooty, porous stuff that lodges in the valleys of the Alps; I mean the veritable, pure, clear, crystal ice of the ice-pitcher. A wall a hundred yards high, and in some places towering up an additional fifty; a wall extending down deeper in the ocean than it reaches from the ocean to the sky; hard as adamant, sharp and edged like flint, aqua-marine in color, deepening towards the water into indigo, tipped on the summits and projections with a froth of snow. If I did not know that it was ice, I should believe that it was glass. If I did not know that it was the work of the Creator, I should believe that here had assembled a convocation of architects, who in their collective ingenuity had reproduced a combination of the chefs-d'œuvre of their art; for here were the buttresses of the English abbeys, and flying buttresses of Notre Dame, turrets of the Normans, towers of the early English, spires of the cathedral in Cologne, wonderful unoccupied niches, pilasters of the purest white marble and green malachite, and decorative carving and high polish worthy of Cellini.

It was a cloudy day, yet the front glistened with prismatic splendor. What will it be, I asked myself, if in the afternoon the setting sun shall light it up? But we are too close to it for our own safety, we learn, and are slowly moved back half a mile, where our anchor is dropped and preparations are made to row us on shore to climb to the top of the glacier. While we are moving a sharp detonation rings out like the firing of a rifle, and one of the beautiful spires on the crest of the very centre of the wall is shattered into atoms, and its fragments fall with a splash four hundred feet. Later there is a report as of a cannon, but without result; this, we are told, is the parting of the sea of ice somewhere far back in its mountain home. Presently two similar explosions, evidently right close to us, followed by rumbling echoes, and over topples a huge

mass weighing tons, which sinks so far that several seconds elapse before it rises to the surface, swaying to and fro until it finds its equilibrium, and then floats down the current, one more turquoise gem added to the chain which precedes it.

And this continued all day, sometimes at intervals of seconds only, sometimes of half an hour, and when we retired at night the explosion and the splash became as monotonous and periodical as the tinkling of the street-car bell or the footstep of the passer-by does at home. There was one tremendous breaking-off towards evening; the sun, as we had hoped, was out in full glory, and at the distance from which we now viewed the glacier it was a mountain of snow-covered ice chopped off in front. For many miles we could see over and beyond the façade, as though looking at a great river of snow; yet the façade itself was a face of corrugated emerald, reflecting the sun's rays at every imaginable angle, and changing and scintillating with every movement of the ship.

Suddenly, near the centre, the top began to incline forward, and the whole face of probably twenty yards in width, from the top of the glacier to the bottom of the bay, fell outward as a ladder would fall, without a break anywhere. There was a tremendous upheaving of the water, of course; then the report of the invariable explosion reached us, but no trace remained of the fallen ice, save the swell in the water, which had almost reached and rocked the steamer. I do not know how much time elapsed before the lovely thing rose to the surface, but it seemed an age, and then it came in a dozen pieces, each of the same exquisite diaphanous blue, which, as they approached us gradually, changed to a clear transparent sapphire.

If it will help to serve the purpose of giving a just idea

of the colossal proportions of the scene I endeavor to describe, let me say that the Capitol at Washington, the City Hall in Philadelphia, the Cathedral, the Equitable, and the Mills Buildings in New York, and all the mammoth newspaper offices in the same city might be floated in front of the Muir Glacier, and yet its emerald walls would overtop and engulf them all. As a contrast to all that is pure and chaste in the scene before us, there rushes out from the eastern end of the glacier a subglacial stream of thick, dirty water, much resembling, as it boils up from its cavernous outlet, the mud geyser of the Yellowstone. This is a perpetually flowing river, charged with sediment and *débris* from the scouring process produced by the friction of the moving ice along its bed of rock; it gives the water in the inlet a thick, gray color, utterly destroying the charm of its otherwise transparent character.

If you are amiable enough to say that what I have written gives a sufficiently correct idea of what you expect to see, I beg to differ from you. No camera, no pencil, no vocabulary, can do more than produce a desire to see for one's self. I can only say that it has been my fortune to behold much that is grand in nature and in art at home and abroad, but the hours spent at Muir Glacier made the great event of my life. If God spares me, I hope to see it often. And fearing I might be accused of exaggeration, which is far from my desire, for I am searching in vain for superlatives which would do the subject justice, let me quote from others who preceded me, and all of whom have established their reputation as authorities.

Miss Kate Field says, "In Switzerland a glacier is a vast bed of dirty, air-holed ice that has fastened itself, like a cold porous plaster, to the side of an Alp. Distance alone lends enchantment to the view. In Alaska a glacier is a wonderful torrent that seems to have been suddenly frozen

when about to plunge into the sea. . . . Think of Niagara Falls frozen stiff, add thirty-six feet to its height, and you have a slight idea of the terminus of Muir Glacier, in front of which your steamer anchors; picture a background of mountains fifteen thousand feet high, all snow-clad, and then imagine a gorgeous sun lighting up the ice-crystals with rainbow coloring. The face of the glacier takes on the hue of aqua-marine, the hue of every bit of floating ice, big and little, that surround the steamer and make navigation serious. These dazzling serpents move at the rate of sixty-four feet a day, tumbling headlong into the sea, and, as they fall, the ear is startled by submarine thunder, the echoes of which resound far and near. Down, down, down goes the berg, and woe to the boat in its way when it rises again to the surface."

Charles Hallock in "Our New Alaska," pp. 172-733: "The glacier wall overhung us with its mighty majesty, three times the height of the steamer's mast or more, and we seemed none too far away to escape the constantly cleaving masses which dropped from its face with deafening detonations. The foam which gathered from the impetus of the plunges surged upward fully two-thirds of the height of the cliff, and the resulting swell tossed the large steamer like a toy, and rolled up in breakers of surf upon the beach. . . . The glacier is by no means smooth, but is seamed and riven in every part by clefts and fissures. It is hollowed into caverns and grottos, hung with massive stalactites, and fashioned into pinnacles and domes. Every section and configuration has its heart of translucent blue or green, interlaced or bordered by fretted frostwork of intensest white, so that the appearance is at all times gnome-like and supernatural. . . .

"I cannot conceive how any one can sit by and contemplate without emotion the stupendous throes which give

birth to the icebergs, attended with detonations like explosions of artillery, and reverberations of thunder across the sky, and the mighty wreckage which follows each convulsion. Nevertheless, I have seen a lady loll with complaisance in her steamer chair comfortably wrapped for the chilly air, and observe the astounding scene with the same languid contemplation that she would discuss her social fixtures and appointments. Zounds! I believe that such a human negation would calmly view the wrecks of worlds and hear the crack of doom at the final rendering, if it did not affect her set. She could watch, at a suitable distance, the agony of Christian martyrs, the carnage of great battles, the sweep of cyclones, the diluvial submergence. Dynamite would not appall her, but to me it would be the acme of satisfaction, ineffably supreme, to startle such clods of inanition by a cry of mouse, and electrify them into momentary emotion. No vinaigrette would ever mitigate the shock." . . .

Mrs. E. R. Scidmore, in "*Journeys in Alaska*," says, "Avalanches of crumbling snow and great pieces of the front were continually falling with the roar and crash of artillery, revealing new caverns and rifts of deeper blue light, while the spray dashed high and the great waves rolled along the icy wall, and, widening in their sweep, washed the blocks of floating ice up on the beaches on either side. . . . The nearer one approached the higher the ice-walls seemed, and all along the front there were pinnacles and spires weighing several tons, that seemed on the point of toppling every moment. The great buttresses of ice that rose first from the water and touched the moraine were as solidly white as marble, veined and streaked with rocks and mud, but farther on, as the pressure was greater, the color slowly deepened to turquoise and sapphire blues."

Alexander Badlam, in his "*Wonders of Alaska*," p. 42,

quotes Professor Muir himself as saying that the front and brow of the glacier were "dashed and sculptured into a maze of yawning chasm, ravines, cañons, crevasses, and a bewildering chaos of architectural forms, beautiful beyond the measure of description, and so bewildering in their beauty as to almost make the spectator believe he was revelling in a dream." "There were," he said, "great clusters of glistening spires, gables, obelisks, monoliths, and castles, standing out boldly against the sky, with bastion and mural, surmounted by fretted cornice, and every interstice and chasm reflecting a sheen of scintillating light and deep-blue shadow, making a combination of color, dazzling, startling, and enchanting."

The next sensation in store for the tourist is the climb to the top of the glacier. All the row-boats were lowered, and about a dozen passengers in each, armed with alpenstocks, were ferried in successive groups from the ship to the eastern beach, a distance of perhaps half a mile, instructions being given to each steersman to keep a sharp lookout for falling icebergs. And here your trouble commences unless you are well advised. The ascent is exceedingly difficult; what looks like a mountain of rock over which you must wend your way to the ice-fields, is really a mountain of ice covered by a layer of slimy mud, crusted with pieces of flinty granite, standing up on end like broken bottle glass on top of a wall. I wore India-rubber high boots when I started, and I needed crutches before I finished. It may be chilly as you leave the ship, according as the sun may be out or in; if chilly, get your escort to carry an extra shawl for you to wrap yourself in when you row back to the ship; if the weather is bright and warm, clothe yourself lightly, for it grows warmer with the glare from the ice and the physical exertion. Be very careful where you step, and if you are wise follow in the footsteps of others; do not

undertake to lead, else one foot may be trying to ascertain the depth of a quagmire and the other exploring a fissure.

After an ascent of perhaps two and a half miles, which seem more like ten, you will find yourself on the edge of a frozen sea, frozen, as it were, while in the throes of a tempest, a bay of storm-tossed waves solidified as by a signal; and this extends as far as the eye can reach up into the mountains towards the north, and several miles across to the hills upon the opposite shore. The ice is by no means clear or brilliant, on the contrary, its color is milky and its formation honey-combed, plastic, porous, and yielding to the tread; besides which it is besmeared with sediment from mountain thaws which have traversed its rifts, and disfigured by fallen logs and drift-wood.

I confess if I visited Muir Glacier a hundred times I should always remain on deck and watch the pyrotechnics of the façade rather than undergo the thankless fatigue of climbing to the top, which is infinitely more laborious than the ascent of Vesuvius on foot through the lava, or any work to be done on the trails of the Yosemite. To those who are willing to undertake it, however, I suggest that when they have ascended the first mile, which will bring them on a line with the top of the wall of the glacier, they should look back at their little tiny ship, floating like the "Maid of the Mist" beneath Niagara, to fully realize the immense proportions of the glacier.

It is said that persons have been missed and never again found who made this ascent, and I know that at least one case is authentic, that of a young clergyman, who, straying away from his companions, was never again seen, though the most diligent search was made for him by his friends and the ship's crew. A slip into one of those crevasses which is covered by a thin coat of ice, means to be precipitated in an instant to a depth where no human aid can

reach you. In fact, I would advise all who wish to preserve the impression of Muir Glacier in its pure, idealized, unsullied grandeur, to stay aboard and gaze on its beautiful face.

It is a Persian custom, after plucking the fruit, to tear it asunder in the middle, hand the sunny side to the friend and throw the other half away, the best portion being the only part good enough for those they love. It is my duty to present to you the better half of the glacier and to cast away the other. Tired, footsore, and muddy, we were all early in bed, and while dozing to sleep I was much impressed with the awful stillness of the hour; everybody had retired, not even the tread of the man on watch was heard, the very machinery was sleeping, but every now and then there was a splash and a report and an echo that brought with them the proof that the forces of nature were ever awake, and that what was, "is, and ever shall be, world without end."

A SUMMER TRIP TO ALASKA.

JAMES A. HARRISON.

[Nature possesses no scenery more beautiful than that to be found on the Pacific coast of Washington and in the island region leading to north Alaska. And the description of it given below is well worth reproduction, for its poetic appreciation of this rich scenic route.]

THE whole fourteen hundred—one might say two thousand—miles of coast extending from Puget's Sound to Behring's Strait is a succession of beautiful and picturesque archipelagoes, consisting of hundreds, if not thousands, of islands, through which there are countless water-caves, lakes, bays, inlets, as smooth as Lake George and the Hud-

son, and far more lovely. The smoothness of the water is such that life on the steamer is a luxurious rest, and the stimulating coolness of the air in summer contributes to pleasant days and delightful nights. Our summer trip covered about two thousand five hundred miles from Portland and back, and we had ample opportunities to stop at the various settlements, talk with the Indians, and collect curiosities.

On leaving Port Townsend early in August, our ship made for the Straits of Georgia, and for a long time followed the aqueous boundary-line between the British and American possessions. The fog dissolved, and we caught views of Smith's Island, Bellingham Bay, and other points. The scenery became river-like, the strait now opening into waveless lakes, now contracting, like the neck of a bottle, into channels where there were counter-currents and chopped seas.

At Active Bay we could not tell which way we were going, the passage seemed closed by lofty mountains, and the sea appeared to flow against their bases; but presently the wall of rock split into a wooded gorge, through which we shot with a graceful curve.

The long meandering line of Vancouver Island followed for three hundred miles on the left, and we crossed the Gulf of Georgia in water of enchanting tranquillity.

Our first days were spent in threading the wilderness of islands off Vancouver, and we were close enough to the coast on the right to see it distinctly. There was the continental coast range of Cascade Mountains, vanishing streaks of snow and silver on our eastern horizon, rising from five hundred to two thousand five hundred feet above the sea-level. Its peaks lay in every imaginable shape, twisted, coiled, convoluted against the horizon-bar, now running up into a perfect cone, like the Silberhorn of

Switzerland, now elongating in rippling lines along the east, now staining the sky with deep-blue masses of ultramarine flecked with pearly lines.

The smoke of the burning forests of Washington Territory and British Columbia had filled the air for days, and worried us not a little; but one morning we awoke in perfect sunshine, and found an atmosphere impregnated with frosty sparkles from the distant snow-peaks. Just before nightfall, when we were about to cross Queen Charlotte's Sound, a fog came up, and the pilot thought it advisable to lie by for the night, more particularly as the coast is a dangerous one and is strewn with reefs and rocks; so, while we were at dinner, the ship wheeled around, and we reversed our course, going south until we reached Port Alexandria, one of the most perfect little harbors conceivable. It is a cove just like the foot of a stocking; a tiny, circle-shaped island lies in its mouth, and richly-wooded heights throw their green shimmer on the placid water.

Here we lay till morning, as "snug as a bug in a rug." Just before entering the cove, which is only about two hundred yards wide, we saw in the distance an Indian sea-canoe, with its wet paddles flashing in the sun, and the agreeable thought was suggested, Suppose we should be surrounded and scalped in the night! Nothing could have been easier in this lonely neighborhood.

The perpetual wheeling of the vessel in her nautical evolutions as she steamed through each successive archipelago gave rise to ever-new comment on the new vistas and island-combinations before us. The coast of Maine is not to be mentioned in comparison with this, nor the island-dusted Caribbean Sea. These inland-sweeping seas open in long river reaches, beyond which, in sharp sunshine, rise the everlasting peaks, burnished with ice. The shores of British Columbia are densely clothed with diminutive

needle-wood, much of which is dead, so that the pale yellow-green is toned with brown-gray. The water is intensely salt, and is skimmed by wild duck and by low-flying, tufted water-fowl.

As we were passing along one morning, an Indian crew came dashing out in a canoe, with a deer for sale. There were stunted-looking squaws in the boat, and all quacked and gesticulated and grunted after the peculiar linguistic fashion of the neighborhood. These Indians are wonderfully deft with their fingers, and weave bottle-cases, satchels, baskets, and table-mats out of split and dyed grasses with curious delicacy and skill. Their face-type is the homeliest I have seen: enormous skulls, high-angled cheek-bones, blinking black eyes, flattish noses, and shocks of horse-hair. Evidently they are expert huntsmen and sportsmen: often we saw their camp-fires, or a canoe stealing along the silent water, filled with crouching forms.

Day after day there was a never-ending succession of lake-scenery,—long, winding lanes of green water between steep snow-streaked domes and precipices. The evenings softened into singularly lovely nights, with close-hugging shores, volumes of dark, iodine-hued water, lingering stars, and phosphorescence. The light hung over the hyperborean landscape as if loath to leave. At ten o'clock one evening we went out and found the ship steaming up a lane of purple glass,—the water magically still, the air full of soft, plaintive cries from the breeding gulls, the tinkle of the parted sea around our bows, and the dim, spectral water lighted up at the end of the long avenue by a haunting aurora.

Many a time the cabin door formed a delightful frame for a forest-picture,—gliding water, pale-blue sky, a broken shore, and, behind, long lines of brilliant snow-peaks, with their chased and frozen silver. We would lie asleep for a

few moments in the cool dark of the cabin-interior, and then wake up with one of these perfect, swiftly-moving views in the foreground. Before we caught it, often it had gone,—the pale, plenteous beauty of the fir-crowned shore, the dancing islets, the sedgy strand-line, the many-colored rocks, with their pools and fountain-basins of transparent water caught from the deep and held in by their rocky framework in a lightness and purity of crystal dew.

Then the ship ran dangerously near to the coast, or again out into the open sound, with its mediterranean sprinkle of islets, serrated walls of rocks, coves and island-mounds, wherein nested shadows of amethyst or indigo.

The flow of life in some of these coves and estuary-like indentations is marvellous, the fish coming in egg-laden, and looking for streams of fresh water in which to deposit their ova. We anchored in one of these inlets, and found on the land luxuriant ferns and splendid clumps of yellow cedar and hemlock, with snow-banks behind. Half a dozen little bucks and half-breeds were tumbling about in the water through the long afternoon light, which seemed to have an amaranthine quality and to be unfading. The sun did not set till after eight o'clock, and there was cold, ghostly, green light up in the north till nearly midnight. When darkness did come, it was of the genuine cuttle-fish kind,—inky,—splashed with stars. There was now and then a delicate shell of a moon incising the sky against a mountain-side and lending the most fragile transfiguration to its top.

As we approached Fort Wrangel, the ship's company turned out in the sweet evening sunshine and found a glorious panorama awaiting them. The sheen of a mighty mass of embattled peaks and pinnacles and feathery floating snow-points shone high up in the evening air, just mellowing under a magnificent sunset. These mountains guard

the entrance to the Stickeen River and mount up the horizon after the Duke of Clarence Strait has been traversed.

Wrangel itself is most memorably situated just on one side of these sheeny peaks and glaciers, almost in the shadow of the Devil's Thumb, which rises about four hundred feet above its own mountain-cluster and forms one of a throng of confused and radiant *aiguilles* overlooking the Stickeen. The sunset had not entirely faded at nine o'clock, when we touched shore and rejoiced our eyes with a series of wonderful semi-arctic color-pictures,—coal-black islands, purple islands, lilac islands, islands in india-ink and amber, lying in glacier-water of pale green, and above and beyond all the glorious flush of the sun stealing in between the white snow-needles and throwing them out and up into luminous relief.

Opposite the town is an island shaped like the cocked hat of a gendarme, where it was said that the curious polygonal garnets embedded in schist and peculiar to this region are found. There were plenty of them as large as walnuts for sale at twenty-five cents a dozen. Odd carved boxes, too, made of an unknown wood and inlaid with shells, were here in plenty; cases of buckskin, containing the conjuring-sticks or gambling-kits of the Thlinkit medicine-men; loin-cloths, ornamented with multitudes of rattling puffin-beaks; head-dresses of defunct warriors; fantastic and horrible masks; huge spoons carved out of the horns of the mountain-ibex; bead-work on leather; robes of many-colored skins quilted together; images carved to resemble otters; fleecy robes of wild sheep and goat; pipes cut with nude figures; antlers; stuffed animals; white-breasted loons, and the like.

After a short stop for landing the mails, the vessel was soon traversing Wrangel Strait, just under some splendid glaciers and snowy mountains, the water perfectly smooth,

though full of small icebergs, which glittered in the sunshine and had broken off from the descending ice-mass. Enormous rivers of ice flow down between these mountains and debouch in the sea, their current mysteriously stayed by the low temperature. We were particularly fortunate in having fine, clear weather early in the morning, especially at this point, where we could see the great Pat-tison Glacier. The ship entered the enchanted region through a narrow passage, which one of us christened the "Silver Gates," the Beulah Mountains edging our Pilgrim's Progress in passionless white as we zigzagged along the course.

A little later, the scenery on Frederic Sound became truly transcendent: grand mountains, forms that would be awful but for the sunshine resting on their heads, the lake-like sound, with its blue spits of land and cameo-like promontories profiled against the sky, motionless *glace-de-Venise* water reflecting a thousand shades of azure and gray and white, gulls resting on the water, with white bodies and black tips, almost a complete circle of brilliant snow-banks peeping above the clouds that hung to them amorously, and far-away vistas of blue-white glaciers coming down to meet the water-margin.

Schools of spouting whales played in the distance, and the passengers sent balls out of their pistols hissing on the water, but happily hitting nothing. During the last trip two lovely antlered creatures came swimming along in the water, trying to cross one of the channels to another grazing-ground. They were taken on board, but one of them died.

The next landing-place was Killimoo, a little Indian village on an island surrounded by dim-green heights and flickering, ever-changing mountain-views. It is a great station for drying codfish, long lines of which lay spread

out on the wharf in the sun to dry. As night fell the squaws and Indian maidens gathered the rattling fish-carcases under little ark-like receptacles, where they lay till morning out of the dew.

At Juneau some of the passengers walked or rowed off to the gold-mines in the mountains, where they picked up specimens of gold-quartz and some teacupfuls of sifted gold-dust. One of these was said to be worth six hundred dollars, another over twelve hundred dollars. One was reminded of the gold-dust story of Alkmaion in Herodotus.

Shortly after this the ship cast anchor at Chilkat and Pyramid Harbor, our two highest points in Alaska waters, about latitude $59^{\circ} 12'$ north. We had but a poor glimpse of the glaciers on the Chilkat side,—one a magnificent down-flow of pale-blue ice, the other a frozen river caught and compressed in between strangling hills.

The location of Pyramid Harbor is very beautiful,—a wind-sheltered nook, a curving shore, covered with pebbles, alder-clad heights just behind, and dimly-flashing ice-peaks peeping out of the mist just over the shoulder of a huge green rock-slope. A salmon-cannery in the foreground, flanked by an Indian village, a semilune of pure green water, nearly fresh, and a curious pyramid-shaped knoll rising from it, constituted other features of the environment. The lifting mists drew aside for a while, and refreshed the sight with views of the great sculpture-lines of the surrounding mountains.

[We may pass the description of Sitka, and proceed.]

We were greatly favored when we left Sitka. Starting off in a rain, in which everything lay in muddy eclipse, we woke up next morning and found ourselves tracing the outside route to the Muir Glacier in sparkling sunshine. The transition was delightful, and, though most of the

passengers were sick from the tossing of the ship on the long outside ocean-swell, I believe they all enjoyed the sunshine as it flashed into their cabin windows, played on the walls, and pricked and scattered the enormous vapor masses that hung over the mountains on our right. There were no longer the vaulted vapors of the preceding days, the dense counterpane of nebulous gray that covered the whole sky with its monotony. The heavy cloud-banks clung to the mountains, leaving an exquisite arc of sky, almost Italian in its sunny azure.

Nothing could be more superb than the deep, dark, velvety tints of the crinkled and crumpled mountains as they shelved to the sea and came in contact there with an edging of foam from the blue Pacific. Huge jelly-fish flapped about in the clear water, nebular patches of protoplasmic existence, capable, apparently, of no other functions than sensation, motion, and self-propagation. Some of them were richly streaked, long-tailed, delicately margined, with comet-like streamers, jelly-frills, and nuclei like a wide-open sunflower. Their motion was so indolently graceful that I could not help gazing at them.

Mount St. Elias! Yes, there it was, they affirmed, on the northeastern horizon, a vapory, unsubstantial cone, dancing up and down in the refracting light. I looked and looked, persuading myself that I saw the glorious vision nineteen thousand five hundred feet high. Others persuaded themselves of the same fact, being naturally ambitious of carrying away remembrances of the tallest mountain in all America. But, after all, I fancy that nobody had a very strong faith in his discovery, particularly as the reputed mountain seemed to change its place, flit hither and thither on the curve of the sky, and finally disappear.

But yonder! What is that? Clouds? Apparently. But look again. What, that small speck just on the edge

of the water? No, higher up—up—up. What a sight! Certainly the grandest view we have had yet. A huge, white, snow-tipped back, like a camel's hump, now loomed apparently right out of the water's edge,—the mighty range of Mount Fairweather, Mount Crillon, and eight or ten other domes and peaks, the highest fifteen thousand five hundred feet high, according to the measurement of the United States Coast Survey. This is the finest mountain-landscape we have ever seen, not even excepting the Alps from Neufchâtel. The peaks looked enormously high as they shot up just behind the sea-edge, far above the first stratum of cloud which ran along midway of the mountain in deep slate-colored belts. Now and then the vapor thinned to the fineness of tulle and Brousa gauze, behind which the mountain-colors loomed in vague and yet radiant purity. Gradually the ardent sun melted away the misty striated belts of cloud, and the great peaks stood out calmly and gloriously effulgent in the crystal August air, a scene of exquisite loveliness and sublimity. At one end a mighty glacier ran down to the sea, and at the other the pygmy mountains (two or three thousand feet high) we had been coasting lay like ebon carvings against the white, a ripple of dark velvet against ermine.

For hours we steamed towards this splendid picture, which, while growing more and more distinct, did not appear to be any nearer than when we first saw it. In the afternoon we turned to the right of this range into icy straits, and soon we were in the midst of a scene more wonderful, perhaps, than that through which we had just passed. On the light-green water lay literally hundreds of icebergs, of all shapes and sizes, some a deep translucent blue, the blue of cobalt, others green, others a pure white,—serrated, castellated, crenellated, glittering,—from the size of a tureen to that of a small church. We seemed on

the point of entering that ancient palæocrystic sea of which the geologists speak,—ice everywhere, our ship cutting its way through impinging ice.

WINNIPEG LAKE AND RIVER.

W. F. BUTLER.

[Colonel W. F. Butler, in "The Great Lone Land," gives us some very interesting information about the life and scenery of the great American Northwest, from which we select the following description of a picturesque lake and river. His journey was made during the Riel rebellion, and the traveller was on his way to the Lake of the Woods, where he expected to meet an expedition sent for the suppression of the rebellion. The Red River Indians gave him a hearty send-off.]

THE chief gave a signal, and a hundred trading guns were held aloft, and a hundred shots rang out on the morning air. Again and again the salutes were repeated, the whole tribe moving down to the water's edge to see me off. Putting out to the middle of the river, I discharged my fourteen-shooter into the air in rapid succession; a prolonged war-whoop answered my salute, and, paddling their very best, for the eyes of the finest canoers were upon them, my men drove the little craft flying over the water until the Indian village and its still firing braves were hidden behind a river bend. Through many marsh-lined channels, and amidst a vast sea of reeds and rushes, the Red River of the North seeks the water of Lake Winnipeg. A mixture of land and water, of mud, and of the varied vegetation which grows thereon, this delta of the Red River is, like other spots of a similar description, inexplicably lonely.

The wind sighs over it, bending the tall weeds with mournful rustle, and the wild bird passes and repasses with plaintive cry over the rushes which form his summer home.

Emerging from the sedges of the Red River, we shot out into the waters of an immense lake,—a lake which stretched away into unseen spaces, and over whose waters the fervid July sun was playing strange freaks of mirage and inverted shore-land.

This was Lake Winnipeg,—a great lake, even on a continent where lakes are inland seas. But vast as it is now, it is only a tithe of what it must have been in the earlier ages of the earth.

The capes and headlands of what once was a vast inland sea now stand far away from the shores of Winnipeg. Hundreds of miles from its present limits these great landmarks still look down on the ocean, but it is an ocean of grass. The waters of Winnipeg have retired from their feet, and they are now mountain-ridges, rising over seas of verdure. At the bottom of this by-gone lake lay the whole valley of the Red River, the present Lake Winnipegosis and Manitoba, and the prairie islands of the Lower Assiniboine,—one hundred thousand square miles of water. The water has long since been drained off by the lowering of the rocky channels leading to Hudson Bay, and the bed of the extinct lake now forms the richest prairie-land in the world.

But although Winnipeg has shrunk to a tenth of its original size, its rivers still remain worthy of the great basin into which they once flowed. The Saskatchewan is longer than the Danube, the Winnipeg has twice the volume of the Rhine. Four hundred thousand square miles of continent shed their waters into Lake Winnipeg; a lake as changeable as the ocean, but, fortunately for us, in

its very calmest mood to-day. Not a wave, not a ripple on its surface, not a breath of breeze to aid the untiring paddles. The little canoe, weighed down by men and provisions, had scarcely three inches of its gunwale over the water, and yet the steersman held his course far out into the glassy waste, leaving behind the marshy headlands which marked the river's mouth.

A long low point stretching from the south shore of the lake was faintly visible on the horizon. It was past mid-day when we reached it; so, putting in among the rocky boulders which lined the shore, we lighted our fire and cooked our dinner. Then, resuming our way, the Grand Traverse was entered upon. Far away over the lake arose the point of the Big Stone, a lonely cape whose perpendicular front was raised high above the water. The sun began to sink towards the west; but still not a breath rippled the surface of the lake, not a sail moved over the wide expanse, all was as lonely as though our tiny craft had been the sole speck of life on the waters of the world. The red sun sank into the lake, warning us that it was time to seek the shore and make our beds for the night. A deep sandy bay, with a high backing of woods and rocks, seemed to invite us to its solitudes. Steering in with great caution among the rocks, we landed in this sheltered spot, and drew our boat upon the sandy beach. The shore yielded large store of drift-wood, the relics of many a northern gale. Behind us lay a trackless forest, in front the golden glory of the western sky. As the night shades deepened around us and the red glare of our drift-wood fire cast its light upon the woods and rocks, the scene became one of rare beauty.

As I sat watching from a little distance this picture so full of all the charms of the wild life of the *voyageur* and the Indian, I little marvelled that the red child of the lakes

and the woods should be loath to quit such scenes for all the luxuries of our civilization. Almost as I thought with pity over his fate, seeing here the treasures of nature which were his, there suddenly emerged from the forest two dusky forms. They were Ojibbeways, who came to share our fire and our evening meal. The land was still their own. When I lay down to rest that night on the dry sandy shore, I long watched the stars above me. As children sleep after a day of toil and play, so slept the dusky men who lay around me. It was my first night with these poor wild sons of the lone spaces; it was strange and weird, and the lapping of the mimic wave against the rocks close by failed to bring sleep to my thinking eyes.

[The next day an early start was made.]

We entered the mouth of the Winnipeg River at mid-day and paddled up to Fort Alexander, which stands about a mile from the river's entrance. Here I made my final preparations for the ascent of the Winnipeg, getting a fresh canoe better adapted for forcing the rapids, and at five o'clock in the evening started on my journey up the river. Eight miles above the fort the roar of a great fall of water sounded through the twilight. In surge and spray and foaming torrent the enormous volume of the Winnipeg was making its last grand leap on its way to mingle its waters with the lake. On the flat surface of an enormous rock which stood well out into the boiling water we made our fire and our camp.

The pine-trees which gave the fall its name stood round us dark and solemn, waving their long arms to and fro in the gusty winds that swept the valley. It was a wild picture. The pine-trees standing in inky blackness; the rushing water, white with foam; above, the rifted thunder-clouds. Soon the lightning began to flash and the voice of

the thunder to sound above the roar of the cataract. My Indians made me a rough shelter with cross poles and a sail-cloth, and, huddling themselves together under the upturned canoe, we slept regardless of the storm. . . .

A man may journey very far through the lone spaces of the earth without meeting with another Winnipeg River. In its nature has contrived to place her two great units of earth and water in strange and wild combinations. To say that the Winnipeg River has an immense volume of water, that it descends three hundred and sixty feet in a distance of one hundred and sixty miles, that it is full of eddies and whirlpools, of every variation of waterfall from chutes to cataracts, that it expands into lonely pine-cliffed lakes and far-reaching island-studded bays, that its bed is cumbered with immense wave-polished rocks, that its vast solitudes are silent and its cascades ceaselessly active,—to say all this is but to tell in bare items of fact the narrative of its beauty. For the Winnipeg by the multiplicity of its perils and the ever-changing beauty of its character, defies the description of civilized men as it defies the puny efforts of civilized travel. It seems part of the savage,—fitted alone for him and for his ways, useless to carry the burden's of man's labor, but useful to shelter the wild things of wood and water which dwell in its waves and along its shores. And the red man who steers his little birch-bark canoe through the foaming rapids of the Winnipeg, how well he knows its various ways! To him it seems to possess life and instinct, he speaks of it as one would of a high-mettled charger which will do anything if he be rightly handled. It gives him his test of superiority, his proof of courage. To shoot the Otter Falls or the Rapids of Barrière, to carry his canoe down the whirling of Portage-de-l'Isle, to lift her from the rush of water at the Seven Portages, or launch her by the edge of the whirlpool below the Chute-à-Jocko,

all this is to be a brave and a skilful Indian, for the man who can do all this must possess a power in the sweep of his paddle, a quickness of glance, and a quiet consciousness of skill, not to be found except after generations of practice. For hundreds of years the Indian has lived amidst these rapids, they have been the playthings of his boyhood, the realities of his life, the instinctive habit of his old age. What the horse is to the Arab, what the dog is to the Esquimaux, what the camel is to those who journey across Arabian deserts, so is the canoe to the Ojibbeway. Yonder wooded shore yields him from first to last the materials he requires for its construction: cedar for the slender ribs, birch bark to cover them, juniper to stitch together the separate pieces, red pine to give resin for the seams and crevices. By the lake or river shore, close to his wigwam, the boat is built;

“And the forest life is in it,—
All its mystery and its magic,
All the tightness of the birch-tree,
All the toughness of the cedar,
All the larch's supple sinews.
And it floated on the river
Like a yellow leaf in autumn,
Like a yellow water-lily.”

It is not a boat, it is a house; it can be carried long distances overland from lake to lake. It is frail beyond words, yet you can load it down to the water's edge; it carries the Indian by day, it shelters him by night; in it he will steer boldly out into a vast lake where land is unseen, or paddle through mud and swamp or reedy shallows; sitting in it, he gathers his harvest of wild rice, or catches his fish or shoots his game; it will dash down a foaming rapid, brave a fiercely running torrent, or lie like a sea bird on the placid water.

For six months the canoe is the home of the Ojibbeway.

While the trees are green, while the waters dance and sparkle, while the wild rice bends its graceful head in the lake, and the wild duck dwells amidst the rush-covered mere, the Ojibbeway's home is the birch-bark canoe. When the winter comes and the lake and rivers harden beneath the icy breath of the north wind, the canoe is put carefully away; covered with branches and with snow, it lies through the long dreary winter until the wild swan and the wavey, passing northward to the polar seas, call it again from its long icy sleep.

Such is the life of the canoe, and such the river along which it rushes like an arrow.

The days that now commenced to pass were filled from dawn to dark with moments of keenest enjoyment, everything was new and strange, and each hour brought with it some fresh surprise of Indian skill or Indian scenery.

The sun would be just tipping the western shores with his first rays when the canoe would be lifted from its ledge of rock and laid gently on the water; then the blankets and kettles, the provisions and the guns, would be placed in it, and four Indians would take their seats, while one remained on the shore to steady the bark upon the water and keep its sides from contact with the rock; then when I had taken my place in the centre, the outside man would spring gently in, and we would glide away from the rocky resting-place. To tell the mere work of each day is no difficult matter: start at five o'clock A.M., halt for breakfast at seven o'clock, off again at eight, halt at one o'clock for dinner, away at two o'clock, paddle until sunset at seven-thirty; that was the work of each day. But how shall I attempt to fill in the details of scene and circumstance between these rough outlines of time and toil, for almost every hour of the long summer day the great Winnipeg revealed some new phase of beauty and of peril,

some changing scene of lonely grandeur? I have already stated that the river in its course from the Lake of the Woods to Lake Winnipeg, one hundred and sixty miles, makes a descent of three hundred and sixty feet.

This descent is effected not by a continuous decline, but by a series of terraces at various distances from each other; in other words, the river forms innumerable lakes and wide expanding reaches bound together by rapids and perpendicular falls of varying altitude; thus when the *voyageur* has lifted his canoe from the foot of the Silver Falls and launched it again above the head of that rapid, he will have surmounted two-and-twenty feet of the ascent; again, the dreaded Seven Portages will give him a total rise of sixty feet in a distance of three miles. (How cold does the bare narration of these facts appear beside their actual realization in a small canoe manned by Indians!) Let us see if we can picture one of these many scenes. There sounds ahead a roar of falling water, and we see, upon rounding some pine-clad island or ledge of rock, a tumbling mass of foam and spray studded with projecting rocks and flanked by dark wooded shores; above we can see nothing, but below, the waters, maddened by their wild rush amidst the rocks, surge and leap in angry whirlpools. It is as wild a scene of crag and wood and water as the eye can gaze upon, but we look upon it not for its beauty, because there is no time for that, but because it is an enemy that must be conquered.

Now mark how these Indians steal upon this enemy before he is aware of it. The immense volume of water, escaping from the eddies and whirlpools at the foot of the fall, rushes on in a majestic sweep into calmer water; this rush produces along the shores of the river a counter- or back-current which flows up sometimes close to the foot of the fall; along this back-water the canoe is carefully

steered, being often not six feet from the opposing rush in the central river; but the back-current in turn ends in a whirlpool, and the canoe, if it followed this back-current, would inevitably end in the same place. For a minute there is no paddling, the bow-paddle and the steersman alone keeping the boat in her proper direction as she drifts rapidly up the current. Among the crew not a word is spoken, but every man knows what he has to do, and will be ready when the moment comes; and now the moment has come, for on one side there foams along a mad surge of water, and on the other the angry whirlpool twists and turns in smooth hollowing curves round an axis of air, whirling round it with a strength that would snap our birch bark into fragments, and suck us down into the great depths below. All that can be gained by the back-current has been gained, and now it is time to quit it; but where? for there is often only the choice of the whirlpool or the central river. Just on the very edge of the eddy there is one loud shout given by the bow-paddle, and the canoe shoots full into the centre of the boiling flood, driven by the united strength of the entire crew; the men work for their very lives, and the boat breasts across the river, with her head turned full towards the falls; the waters foam and dash about her, the waves leap high over the gunwale, the Indians shout as they dip their paddles like lightning into the foam, and the stranger to such a scene holds his breath amidst this war of man against nature. Ha! the struggle is useless; they cannot force her against such a torrent; we are close to the rocks and foam; but see, she is driven down by the current, in spite of those wild fast strokes. The dead strength of such a rushing flood must prevail. Yes, it is true, the canoe has been driven back; but behold, almost in a second the whole thing is done,—we float suddenly beneath a little rocky isle on the foot of the

cataract. We have crossed the river in the face of the fall, and the portage landing is over this rock, while three yards out on either side the torrent foams its headlong course.

Of the skill necessary to perform such things it is useless to speak. A single false stroke and the whole thing would have failed; driven headlong down the torrent, another attempt would have to be made to gain this rock-protected spot, but now we lie secure here; spray all around us, for the rush of the river is on either side, and you can touch it with an outstretched paddle. The Indians rest on their paddles and laugh; their long hair has escaped from its fastening through their exertion, and they retie it while they rest. One is already standing upon the wet, slippery rock, holding the canoe in its place; then the others get out. The freight is carried up, piece by piece, and deposited on the flat surface some ten feet above; that done, the canoe is lifted out very gently, for a single blow against this hard granite boulder would shiver and splinter the frail birch-bark covering; they raise her very carefully up the steep face of the cliff and rest again on the top. What a view there is from coigne of vantage! We are on the lip of the fall; on each side it makes its plunge, and below we mark at leisure the torrent we have just braved; above, it is smooth water, and away ahead we see the foam of another rapid. The rock on which we stand has been worn smooth by the washing of the water during countless ages, and from a cleft or fissure there springs a pine-tree or a rustling aspen. We have crossed the Petit Roches, and our course is onward still.

Through many scenes like this we held our way during the last days of July. The weather was beautiful; now and then a thunder-storm would roll along during the night, but the morning sun, rising clear and bright, would almost tempt one to believe that it had been a dream, if

the pools of water in the hollows of the rocks and the dampness of blanket or oil-cloth had not proved the sun a humbug. Our general distance each day would be about thirty-two miles, with an average of six portages. At sunset we made our camp on some rocky isle or shelving shore: one or two cut wood, another got the cooking things ready, a fourth gummed the seams of the canoe, a fifth cut shavings from a dry stick for the fire; for myself, I generally took a plunge in the cool, delicious water; and soon the supper hissed in the pans, the kettle steamed from its suspending stick, and the evening meal was eaten with appetites such as only the *voyageur* can understand.

Then when the shadows of the night had fallen around and all was silent, save the river's tide against the rocks, we would stretch our blankets on the springy moss of the crag, and lie down to sleep with only the stars for a roof.

Happy, happy days were these,—days the memory of which goes very far into the future, growing brighter as we journey farther away from them; for the scenes through which our course was laid were such as speak in whispers, only when we have left them,—the whispers of the pine-tree, the music of running water, the stillness of great lonely lakes.

A FINE SCENIC ROUTE.

HENRY T. FINCK.

[From Henry T. Finck's "The Pacific Coast Scenic Tour" we select the following description of the Canadian Pacific Railway route, which is acknowledged to possess a long succession of grand and beautiful scenery, unequalled by any other railroad route in America. The description is too long a one to be given in full, and for further acquaintance with it the reader must be referred to the book itself.]

AFTER leaving Vancouver, and before reaching Westminster, the train for some time runs along Burrard Inlet, on which is situated Fort Moody, another town which had hoped to be chosen as terminus, and actually did enjoy that privilege for a short time. The shores of the inlet are beautifully wooded, and some of the trees are of enormous size. At the crossing of Stave River a fine view is obtained of Mount Baker, looking forward to the right; and the bridge over the Harrison River, where it meets the Frazer, also affords a picturesque view. For the next fifteen or sixteen hours the train follows the banks of the Frazer River and its tributaries, and this is one of the grandest sections of the route.

At the first the Frazer is a muddy, yellow river, about the size of the Willamette above Oregon City, but more rapid and winding, and an occasional steamer may be seen floating along with the current, or slowly making headway against it. In some places the railway runs so close to the precipitous bank of the river that a handkerchief might be dropped from a car window into the swirling eddies, fifty feet below. At other places it leaves room—and just room enough—for the old wagon-road between the track and the river; but it would take a cool driver, with much confidence in his horses, to remain on his wagon here when a train passes. At last the road itself becomes frightened and crosses the river on a bridge, whereupon it winds along the hill-side above the opposite bank, at a safe distance.

This road was made during the Frazer River gold excitement in 1858, when twenty-five thousand miners flocked into this region, and wages for any kind of work were ten to eighteen dollars a day. To-day the metal no longer exists in what white men consider paying quantity; but Chinamen may still be seen along the river, washing for remnants, their earnings being about fifty cents a day.

There is also a "Ruby Creek" in this neighborhood, and some Indian habitations and salmon-fishing places. Shortly before reaching Yale, which for a long time was the western end of the road, there is a slight intermission in the scenic drama, represented by some rich, level, agricultural lands, as if to give the passengers a moment's rest before the wonders of the Frazer Cañon begin to monopolize their bewildered attention till darkness sets in and drops the curtain on the superb panorama.

Yale, which is so completely shut in by high, frowning mountain walls on every side that the sun touches the village only during part of the day, has lost its importance since it ceased to be a terminus, and seems at present to be inhabited chiefly by Indians and half-breeds. The train is invaded by a bevy of half-breed girls with baskets of splendid apples and pears, which could not be beaten for size and flavor in any of our States, and indicate a possible use for these mountain regions in the future. And now the train plunges into the midst of the series of terrific gorges which constitute the Frazer Cañon, and which makes this railway literally the most gorge-ous in the world. Here were appalling engineering difficulties to overcome, which no private corporation without the most liberal government support could have undertaken. Yet the builders had to be thankful even for this wild and rugged cañon dug out by the Frazer River, without which the Cascade range would have been impassable.

The palace cars of the Canadian Pacific, which contain all the best features of the Pullman cars, with home improvements, have a special observatory, with large windows, at the end of the train, whence the cañon should be viewed; but to see it at its best one must sit on the rear platform, so as to see at the same time both of the wild and precipitous cañon walls, between which the river

rushes along as if pursued by demons. At every curve you think the gorge must come to an end, but it only grows more stupendous, and the river, lashed into foam and fury, dashes blindly against the rocks which try to arrest its course. These rocks, ten to thirty feet wide and sometimes twice as long, form many pretty little stone islands in the middle of the torrent, and are a characteristic feature of the cañon scenery. Numerous tunnels, resembling those on the Columbia River, are built through arches seemingly projecting over the river. The train plunges into them recklessly, but always comes out fresh and smiling on the other side, although it seems that if the bottom of the tunnel should by any chance drop out, the train would be precipitated into the river below.

Once in a while the river takes a short rest, and in these comparatively calm stretches hundreds of beautiful large red fish can be seen from the train, in the clear water, struggling up-stream. With their dark backs and bright red sides they form a sight which is none the less interesting when you are told that they are "only dog salmon," which are not relished by whites, though the Indians eat them.

[A night now passes, during which much fine scenery is missed. But the best is reserved for the next day.]

Scenic wonders now succeed one another with bewildering rapidity throughout the day. This second day, in fact, represents the climax of the trip, and the attention is not allowed to flag for a second. However much such a confession may go against the grain of patriotism, every candid traveller must admit that there is nothing in the United States in the way of massive mountain scenery (except, perhaps, in Alaska) to compare with the glorious panorama which is unfolded on this route. Within thirty-six hours after leaving Vancouver we traverse three of the

grandest mountain ranges in America,—the Cascades, Selkirks, and Rockies,—all of them the abode of eternal snow and glaciers, and all of them traversed through by cañons which vie with each other in terrific grandeur.

Before the Selkirks are reached the train passes the Columbia or Gold range, through the Eagle Pass, so called because it was discovered by watching an eagle's flight. Eagle's Pass is a poetic and appropriate name, and yet I think it would be well to rename this mountain pass and call it Mirror Lake Cañon, because that would call the attention of tourists to what is its most characteristic feature, which may otherwise be overlooked. There are four lakes and many smaller bodies of water in this valley, in whose placid surface the finely-sloped mountain ridges and summits of the pass are reflected with marvellous distinctness, so that here, as in the Yosemite Mirror Lake, the copy is more lovely than the original. Some of the mountain-sides reflected in these mirrors are naked rocks, others are covered with living evergreen trees, and others still with dead trees. In the mirror these dead forests look hardly less beautiful than the living ones; but in the original the eye dwells with more pleasure on the green forests which here, and almost everywhere in British Columbia, grow with the rank luxuriance of a Ceylon jungle. The soil under these dense tree-masses, consisting of decayed pine- and fir-needles, a foot deep, and always moist, makes a paradise for lovely mosses and ferns. Here, also, is the home of the bear, and one would not have to walk far in this thicket to encounter a grizzly, black, or cinnamon bruin.

On emerging from the Mirror Lake Cañon, a great surprise awaits the passengers. The Columbia River—to which they had fancied they had said a final farewell when they were ferried across it on the way from Portland to Tacoma—suddenly comes upon the scene again, as clear

and as picturesque as ever ; and even at this immense distance from its mouth still large enough to require a bridge half a mile long to cross it. A few hours later the train again crosses the Columbia, at Donald, where the river has become much smaller than it seems that it should in such a short distance.

To get an explanation of this circumstance, it is interesting to glance at the map and notice what an immense curve northward the Columbia has made in this interval in order to find a passage through the Selkirk range ; and in thus encircling the snowy Selkirks it has, of course, added to its volume the contents of innumerable glacier streams and mountain brooks. Its real sources are south-east of Donald, on the summit of the Rockies, separated by but a short distance from springs which run down on the eastern side and find their way through the Mississippi into the Gulf of Mexico. Thus do extremes meet. It would be difficult to find anything so curious in the course of any other river as this immense, irregular parallelogram which the Columbia here describes from its sources to Arrow Lake. . . .

The snow-peaks of the Selkirks are now looming up on all sides, and the atmosphere becomes more bracing and Alpine as the train slowly creeps up the mountain-side, doubling up on itself in a loop. The Glacier House is reached before long, and here every tourist who has time to spare should get off and spend a day or two, since next to Banff, in the National Park, this is the finest point along the whole route, scenically speaking, while the air is even more salubrious, cool, and intoxicating than at Banff, owing to the nearness of the glacier. It would be difficult, even in Switzerland, to find a more romantic spot for a hotel than the location of the Glacier House. High peaks rise up on every side, so finely moulded, so deeply mantled

with snow, and presenting such various aspects from different points of view, that we forget our disgust at the fact that, as usual in the West, these grand eternal peaks have been named after ephemeral mortals,—Browns, Smiths, and Joneses. The Grizzly and Cougar Mountains are more aptly named, as these animals will long continue to abound in the impenetrable forests which adorn these peaks below the snow-line. Looking from the hotel towards the glacier, to the left is a peak which looks like the Matterhorn, the most unique mountain in Switzerland, and, what is still more striking, at its side is another smaller peak, which is an exact copy of the Little Matterhorn. . . .

The principal difference between the Swiss Alps and the Selkirk range lies in the aspect of the mountain-sides below the snow-line. These, in Switzerland, are green meadows dotted with browsing cows, and presenting one unbroken mass of dark green, except where an avalanche has tobogganed down and opened what seems at a distance like a roadway, but is found to be a battle-field strewn with the corpses of cedars three and four feet in diameter.

The most imposing view of such a mountain forest unbroken by a single avalanche path is obtained from the snow-sheds just above the hotel. Sitting outside these sheds and looking towards the left, you see a vast mountain slope covered with literally millions of dark-green trees. Why has none of the world's greatest poets ever been permitted to gaze on such a Selkirk forest, that he might have aroused in his unfortunate readers who are not privileged to see one emotions similar to those inspired by it? But I fear that neither verse nor photographs, nor even the painter's brush, can ever more than suggest the real grandeur of such a forest scene. This mountain is not snow-crowned in September, but its wooded summit makes a sharp green line against the snow-peaks beyond

and above. From this summit down to the foot stand the giant cedars, as crowded as the yellow stalks in a Minnesota wheatfield. But in place of the flat monochrome of a wheatfield, our sloping forest presents a most fascinating color spectacle. The slanting rays of the sun tinge the waving tree-tops with a deeply saturated yellowish-green, curiously interspersed with a mosaic of dark, almost black streaks and patches of shade, due to clouds and other causes, and the whole edged by the dazzling snow.

If we descend and enter this forest, a cathedral-like awe thrills the nerves. Daylight has not the power to penetrate to the ground hidden by this dense mass of tree-tops rising two hundred to three hundred feet into the air,—except that an occasional ray of sunlight may steal in for a second, like a flash of lightning. And the carpet on which this forest stands! In America we rarely see a house, even of a day-laborer, without a carpet; why, then, should these royal trees do without one? The carpet is itself a miniature forest of ferns and mosses, luxuriating in riotous profusion on an ever-moist soil, the product of thousands of generations of pine-needles. Nor is this carpet a monochrome, for the green is varied by numerous berries of various kinds, most of which are red, as they should be,—the complementary color of green. But there are also acres of blueberries as large as cherries; and if you will tear off a few branches of these and bring them to the young bear chained up near the Glacier Hotel, he will be very grateful, and you will find it amusing to watch him eating them.

There is music, too, in this Forest Cathedral, which is heard to best advantage from the elevated gallery occupied by the snow-sheds. It takes a trained ear to distinguish the steady, rippling *staccato* sound of a snow-fed mountain brook from the prolonged *legato* sigh of a pine

forest, swelling to *fortissimo*, and dying away by turns. In the romantic spot we have chosen these sounds are blended, the music of the torrents being caught up by the sloping forest as by a huge sounding-board, and increased in loudness by being mingled with the mournful strains of the tree-tops, as orchestral colors are blended by modern masters. Those err who say there is no music in nature. It is not in "Siegfried" alone that the *Waldweben* is musical, that leaves sing as well as birds, while the thunder occasionally adds its loud *basso profundo*. The æsthetic exhilaration which we owe to these poetic sights and sounds is intensified by the salubrious breezes which waft this music to our ears. Born among the clouds and glaciers, they are perfumed in passing across the forests, warmed by the sun's rays in passing over the valley; and every breath of this elixir adds a day to one's life. It is not surprising that mountains should make the best health-resorts; for do they not themselves understand and obey the laws of health? They keep their heads cool under a snow-cap, their feet warm in a mossy blanket, and their sides covered with a dense *fir* overcoat. . . .

For the greater part of the two hours which the train requires to go from Donald to Golden City it passes along the bank of the Columbia River; and there is, perhaps, no part of the whole route where grandeur and beauty are so admirably united as here, especially in the autumn. The grandeur lies in the snowy summits which frame in this Columbia valley—the Selkirks on one side, the Rockies on the other. The beauty lies in the river itself and in the young trees and bushes along its banks, dressed in fall styles and colors, some as richly yellow as a golden-rod, others as deeply purple or crimson as fuchsias or begonias, the yellow predominating. These colored trees occur in groups and streaks along the river, and in isolated patches

on the mountain-sides, where they might be mistaken for brown mosses or lichen-colored rocks. There may be as beautifully colored trees in our Eastern forests, but they are not mixed, as here, with young evergreen pines, nor have they a framework of snow mountains, like these, to enhance their beauty.

High up on the ridges there is another variety of trees of a beautiful russet color set off by a deep-blue sky. Talk of color symphonies. Here they are—miles of them—long as a Wagner trilogy, and as richly orchestrated. Even the masses of blackened logs and stumps—if one can set aside for the moment all thought of pity for the poor charred trees, so happy before the fire in their green luxuriance, and of the sad waste of useful timber—enhance the charm of this scene by contrast.

I have said that the time-table of the Canadian Pacific Railway is so arranged that the finest scenery is passed in daylight, in both directions; but of course there must be exceptions, and, as a matter of fact, as long as the road crosses the three great mountain ranges of the Cascades, Selkirks, and Rockies, there is hardly a mile that does not offer something worth seeing. Consequently, as darkness again closes in soon after leaving Golden, east-bound passengers must resign themselves to lose sight of the Kicking Horse Cañon, the Beaverfoot and Ottertail Mountains, the large glacier on Mount Stephen, etc.,—which is all the more provoking as they have to sit up anyway till midnight, when Banff is reached; for, of course, every tourist who is in his right senses and not a slave to duty gets off here to spend a few days in the Canadian National Park.

[The description of this park we can give only in summary.]

Summing up on the Canadian National Park, we may say it has not so many natural wonders as the Yellowstone

Park,—no geysers, steam-holes, gold-bottomed rivulets, paint-pots, nor anything to place beside the Yellowstone Cañon and Falls. But the Minnewonka Lake may fairly challenge comparison with the Yellowstone Lake, and the mountain scenery is grander in the Canadian Park, and the snow and glaciers are nearer, though not so near as at the Glacier House, where the air is in consequence cooler and more bracing in summer than even at Banff. As the Canadian Park is only twenty-six miles long and ten wide, while the Yellowstone Park is about sixty-two by fifty-four miles, the former can be seen in much less time than it takes to do justice to the latter.

When we get ready to leave Banff we have to take the midnight train, so there is no chance to say good-by to the mountains. But we have seen so much of them since leaving Vancouver, that we have felt almost tempted to cry out to Nature, "Hold, enough; less would be more!" Now we get ample opportunity to ruminate in peace over our crowded impressions. When we get up we are on the prairie; we go to bed in the prairie, after traversing a territory larger than a European kingdom; again we rise on the prairie, and again go to bed on it; and not till Lake Superior is approached does the scenery once more become interesting. . . .

As a general thing, it is no doubt wiser to take the Canadian Pacific Railway westward than eastward, as the scenic climax is on the western side. However, it is quite possible to avoid the feeling of anti-climax on going east, if we conclude the trip with the Thousand Islands and the Rapids of the St. Lawrence, together with Montreal; or with Niagara Falls and the Hudson River. The Pacific slope, no doubt, is scenically far more attractive than the Atlantic; still, there are some things in the East which even California would be proud to add to her attractions.

SOUTH PASS AND FREMONT'S PEAK.

JOHN C. FREMONT.

[Captain John Charles Fremont, one of the earliest government explorers of the Rocky Mountain region and the Pacific slope, was born at Savannah, Georgia, in 1813. Becoming a civil engineer in the government service, in 1842 he explored the South Pass of the Rocky Mountains, ascending in August the highest peak in the Wind River range. This has since been known as Fremont's Peak. In the following year he explored Great Salt Lake. In 1845 he led a third expedition to the Pacific, and during the Mexican war was instrumental in securing California for the United States. He led subsequent expeditions westward, was Republican candidate for the Presidency in 1856, served during the war, and in 1878-82 was governor of Arizona. He died in 1890. We subjoin his account of the crossing of the South Pass and discovery and ascent of Fremont's Peak.]

THE view [of the Wind River Mountains] dissipated in a moment the pictures which had been created in our minds by many travellers who have compared these mountains with the Alps in Switzerland, and speak of the glittering peaks which rise in icy majesty amidst the eternal glaciers nine or ten thousand feet into the region of eternal snows.

[Continuing their course, they encamped on August 7 near the South Pass, and the next morning set out for the dividing ridge.]

About six miles from our encampment brought us to the summit. The ascent had been so gradual that, with all the intimate knowledge possessed by Carson, who had made the country his home for seventeen years, we were obliged to watch very closely to find the place at which we reached the culminating point. This was between two low

hills, rising on either hand fifty or sixty feet. When I looked back at them, from the foot of the immediate slope on the western plain, their summits appeared to be about one hundred and twenty feet above. From the impression on my mind at this time, and subsequently on our return, I should compare the elevation which we mounted immediately at the Pass to the ascent of the Capitol hill from the avenue at Washington. It is difficult for me to fix positively the breadth of this pass. From the broken ground where it commences, at the foot of the White River chain, the view to the southeast is over a champaign country, broken, at the distance of nineteen miles, by the Table Rock, which, with the other isolated hills in its vicinity, seem to stand in a comparative plain. This I judged to be its termination, the ridge recovering its rugged character with the Table Rock.

It will be seen that it in no manner resembles the places to which the term is commonly applied,—nothing of the gorge-like character and winding ascents of the Alleghany passes in America; nothing of the Great St. Bernard and Simplon passes in Europe. Approaching it from the mouth of the Sweet Water, a sandy plain, one hundred and twenty miles long, conducts, by a gradual and regular ascent, to the summit, about seven thousand feet above the sea; and the traveller, without being reminded of any change by toilsome ascents, suddenly finds himself on the waters which flow to the Pacific Ocean. By the route we had travelled, the distance from Fort Laramie is three hundred and twenty miles, or nine hundred and fifty from the mouth of the Kansas.

[They continued their course westward, crossing several tributaries of the Colorado River, and on the 10th reached unexpectedly a beautiful lake.]

Here a view of the intensest magnificence and grandeur burst upon our eyes. With nothing between us and their feet to lessen the effect of the whole height, a grand bed of snow-capped mountains rose before us, pile upon pile, glowing in the bright light of an August day. Immediately below them lay the lake, between two ridges, covered with dark pines, which swept down from the main chain to the spot where we stood. "Never before," said Mr. Preuss, "in this country or in Europe, have I seen such grand, magnificent rocks." I was so much pleased with the beauty of the place that I determined to make the main camp here, where our animals would find good pasturage, and explore the mountains with a small party of men.

[On the 12th this party set out, crossing intervening hills, and ascending through dense forests to the summit of the ridge.]

We had reached a very elevated point, and in the valley below, and among the hills, were a number of lakes of different levels, some two or three hundred feet above others, with which they communicated by foaming torrents. Even to our great height the roar of the cataracts came up, and we could see them leaping down in lines of snowy foam. From this scene of busy waters we turned abruptly into the stillness of a forest, where we rode among the open bolls of the pines, over a lawn of verdant grass, having strikingly the air of cultivated grounds. This led us, after a time, among masses of rock, which had no vegetable earth but in hollows and crevices, though still the pine-forest continued. Towards evening we reached a defile, or rather a hole in the mountains, entirely shut in by dark pine-covered rocks.

[In the morning they ascended a mountain stream, to its source in a small lake surrounded by a lawn-like expanse.]

Here I determined to leave our animals, and make the rest of our way on foot. The peak appeared so near that

there was no doubt of our returning before night; and a few men were left in charge of the mules, with our provisions and blankets. We took with us nothing but our arms and instruments, and, as the day had become warm, the greater part left our coats. Having made an early dinner, we started again. We were soon involved in the most rugged precipices, nearing the central chain very slowly, and rising but little. The first ridge hid a succession of others; and when, with great fatigue and difficulty, we had climbed up five hundred feet, it was but to make an equal descent on the other side; all these intervening places were filled with small deep lakes, which met the eye in every direction, descending from one level to another, sometimes under bridges formed by huge fragments of granite, beneath which was heard the roar of the water. These constantly obstructed our path, forcing us to make long *détours*; frequently obliged to retrace our steps, and frequently falling among the rocks. Maxwell was precipitated towards the face of a precipice, and saved himself from going over by throwing himself flat on the ground. We clambered on, always expecting, with every ridge that we crossed, to reach the foot of the peaks, and always disappointed, until about four o'clock, when, pretty well worn out, we reached the shore of a little lake, in which was a rocky island.

By the time we had reached the farther side of the lake we found ourselves all exceedingly fatigued, and, much to the satisfaction of the whole party, we encamped. The spot we had chosen was a broad, flat rock, in some measure protected from the winds by the surrounding crags, and the trunks of fallen pines afforded us bright fires. Near by was a foaming torrent, which tumbled into the little lake about one hundred and fifty feet below us, and which, by way of distinction, we have called Island Lake.

We had reached the upper limit of the piney region; as, above this point, no tree was to be seen, and patches of snow lay everywhere around us, on the cold sides of the rock. From barometrical observations made during our three days' sojourn at this place, its elevation above the Gulf of Mexico is ten thousand feet. . . .

[They set out early the next morning.] On every side, as we advanced, was heard the roar of waters, and of a torrent, which we followed up a short distance, until it expanded into a lake about one mile in length. On the northern side of the lake was a bank of ice, or rather of snow covered with a crust of ice. Carson had been our guide into the mountains, and, agreeably to his advice, we left this little valley and took to the ridges again, which we found extremely broken, and where we were again involved among precipices. Here were ice-fields, among which we were all dispersed, seeking each the best way to ascend the peak. Mr. Preuss attempted to walk along the upper edge of one of these fields, which sloped away at an angle of about twenty degrees; but his feet slipped from under him, and he went plunging down the plain. A few hundred feet below, at the bottom, were some fragments of sharp rock, on which he landed; and, though he turned a couple of somersets, fortunately received no injury beyond a few bruises.

[That day's work failed, and they returned at evening to the camp. The next day they ascended a long defile on mule-back, and soon had the satisfaction to find that they had taken the right course. Finally, leaving their mules they continued on foot, eventually reaching a point near the summit. Here was an overhanging buttress of rock, which could be surmounted only by passing around one side of it, which was the face of a precipice of several hundred feet in depth.]

Putting hands and feet in the crevices between the blocks I succeeded in getting over it, and when I reached

the top, found my companions in a small valley below. Descending to them, we continued climbing, and in a short time reached the crest. I sprang upon the summit, and another step would have precipitated me into an immense snow-field five hundred feet below. To the edge of this field was a sheer icy precipice; and then, with a gradual fall, the field sloped off for about a mile, until it struck the foot of another lower ridge. I stood on a narrow crest, about three feet in width, with an inclination of about 20° north, 51° east.

As soon as I had gratified the first feeling of curiosity I descended, and each man ascended in his turn; for I would only allow one at a time to mount the unstable and precarious slab, which it seemed a breath would precipitate into the abyss below. We mounted the barometer in the snow of the summit, and, fixing a ramrod in a crevice, unfurled the national flag to wave in the breeze where never flag waved before. During our morning's ascent we had met no sign of animal life, except a small sparrow-like bird. A stillness the most profound and a terrible solitude forced themselves constantly on the mind as the great features of the place. Here, on the summit, where the stillness was absolute, unbroken by any sound, and solitude complete, we thought ourselves beyond the region of animated life; but while we were sitting on the rock, a solitary bee (*Bombus*, the *humble-bee*) came winging his flight from the eastern valley, and lit on the knee of one of the men.

It was a strange place, the icy rock and the highest peak of the Rocky Mountains, for a lover of warm sunshine and flowers; and we pleased ourselves with the idea that he was the first of his species to cross the mountain barrier,—a solitary pioneer to foretell the advance of civilization. I believe that a moment's thought would have made us let

him continue his way unharmed; but we carried out the law of this country, where all animated nature seems at war; and seizing him immediately, put him in at least a fit place,—in the leaves of a large book, among the flowers we had collected on our way. The barometer stood at 18.293, the attached thermometer 44°; giving for the elevation of this summit thirteen thousand five hundred and seventy feet above the Gulf of Mexico, which may be called the highest flight of the bee. It is certainly the highest known flight of that insect.

From the description given by Mackenzie of the mountains where he crossed them, with that of the French officer still farther to the north, and Colonel Long's measurements to the south, joined to the opinion of the oldest traders of the country, it is presumed that this is the highest peak in the Rocky Mountains. [Fremont's Peak is now estimated at thirteen thousand seven hundred and ninety feet. There are many peaks now known over fourteen thousand feet. The highest point is Blanca Peak, fourteen thousand four hundred and sixty-three feet high.]

The day was sunny and bright, but a slight shining mist hung over the lower plains, which interfered with our view of the surrounding country. On one side we overlooked innumerable lakes and streams, the spring of the Colorado of the Gulf of California; and on the other was the Wind River Valley, where were the heads of the Yellowstone branch of the Missouri; far to the north we could just discover the snowy heads of the *Trois Tetons*, where were the sources of the Missouri and Columbia Rivers; and at the southern extremity of the ridge the peaks were plainly visible among which were some of the springs of the Nebraska or Platte River. Around us the whole scene had one main, striking feature, which was that of terrible convulsion. Parallel to its length, the ridge was split

into chasms and fissures; between which rose the thin lofty walls, terminated with slender minarets and columns.

[The party reached camp the next day, and on the 17th turned their faces homeward, the purpose of the expedition having been accomplished.]

IN THE YELLOWSTONE PARK.

FERDINAND V. HAYDEN.

[About the middle of this century reports began to be heard of a veritable wonderland in the far West, as yet seen only by trappers and other adventurers, whose stories of the marvels they had beheld whetted the appetite of scientific explorers. The first attempt to reach the region of the Yellowstone was made in 1856, but failed, and it was not until 1869 that an exploring party entered this marvellous valley. A second party reached the Yellowstone region in 1870, and Mr. N. P. Langford wrote a glowing account of the wonders observed. The first detailed description of the locality was made by Dr. Hayden, chief of the Geological Survey of the Territories, in 1871. From this extended and highly interesting account we can only quote a few passages, selecting those which relate to the hot springs and geysers of the wonderful Fire Hole River region.]

EARLY in the morning of August 30 the valley was literally filled with columns of steam, ascending from more than a thousand vents. I can compare the view to nothing but that of some manufacturing city like Pittsburg, as seen from a high point, except that instead of the black coal smoke there are here the white delicate clouds of steam. Small groups or solitary springs that are scattered everywhere in the woods upon the mountain-sides, and which would otherwise have escaped observation, are detected by the columns of steam. It is evident that some of these groups

of springs have changed their base of operations within a comparatively recent period ; for about midway on the east side of the lower basin there is a large area covered with a thick, apparently modern, deposit of the silica, as white as snow, while standing quite thickly all around are the dead pines, which appear to have been destroyed by the excessive overflow of the water and the increased deposition. These dry trees have a most desolate look ; many of them have fallen down and are incrustated with the silica, while portions that have fallen into the boiling springs have been reduced to a pulp.

This seems to be one of the conditions of silicification, for when these pulpy masses of wood are permitted to dry by the cessation of the springs, the most perfect specimens of petrified wood are the result. In one instance a green pine-tree had fallen so as to immerse its thick top in a large hot basin, and leaves, twigs, and cones had become completely incrustated with the white silica, and a portion had entered into the cellular structure, so that when removed from the water and dried in the sun, very fair specimens were obtained. Members of my party obtained specimens of pine-cones that were sufficiently silicified to be packed away among the collections.

In order that we might get a complete view of the Lower Geyser Basin from some high point, we made a trip to the summit of Twin Buttes, on the west side of the basin. From the top of one of these buttes, which is six hundred and thirty feet above the Fire-Hole River, we obtained a bird's-eye view of the entire lower portion of the valley, which was estimated to be about twenty miles long and five miles wide. To the westward, among the mountains, were a number of little lakes, which were covered with a huge species of water-lily, *Nuphar advena*. The little streams precipitated their waters in the most picturesque

cascares or falls. One of them was named by Colonel Barlow the "Fairy Fall," from the graceful beauty with which the little stream dropped down a clear descent of two hundred and fifty feet. It is only from a high point that it can be seen, for the water falls gently down from the lofty overhanging cliff into a basin at the foot, which is surrounded by a line of tall pines one hundred to one hundred and fifty feet in height. The continual flow of the waters of this little fountain has worn a deep channel or furrow into the vertical sides of the mountain. As far as the eye can reach can be seen the peculiar plateau mountain ranges, black with the dense forests of pine, averaging from nine thousand to ten thousand feet above sea-level. . . .

A spring on a level with the river has an enormous square basin thirty feet across, of unknown depth. We called this the "Bath Spring." A little below is another singular form of wonderful beauty. The water issues from beneath the crust near the margin of the river from several apertures. The basin itself is fifteen by twenty feet and twenty feet deep. It seemed to me that nothing could exceed the transparent clearness of the water. The slightest object was reflected in its clear depths, and the bright blue tints were indescribable. We called this the "Cavern." The mud springs are also numerous and important in this group. As usual, they are of all sizes, from an inch or two to twenty or thirty feet in diameter, with contents varying from mere turbid water to stiff mud. They seldom have any visible outlet, but are in a constant state of agitation, with a sound that varies with the consistency of the contents. There are several of the mud-pots that give off a suppressed thud as the gases burst their way through the stiff mortar. Sometimes the mortar is as white as snow, or brown, or tinged with a variety of vivid colors. . . .

On the west side of the Fire-Hole, and along the little

branch that flows into it from the west, are numbers of springs of all grades, and the broad bottom is covered with a snow-white silicious crust. Near the base of the mountains there is a massive first-class boiling spring, in a constant state of violent agitation, sending forth great columns of steam, with a singular toadstool rim. . . . About three miles up the Fire-Hole we meet with a small but quite interesting group of springs on both sides of the stream. There is a vast accumulation of silica, forming a hill fifty feet along the level of the river; upon the summit one of the largest springs yet seen, nearly circular, one hundred and fifty feet in diameter, boils up in the centre, but overflows with such uniformity on all sides as to admit of the formation of no real rim, but forming a succession of little ornamental steps, from one to three inches in height, just as water would congeal from cold in flowing down a gentle declivity. There was the same transparent clearness, the same brilliancy of coloring to the waters, but the hot steam and the thinness of the rim prevented me from approaching it near enough to ascertain its temperature or observe its depth. It is certainly one of the grandest hot springs ever seen by human eye.

But the most formidable one of all is near the margin of the river. It seems to have broken out close by the river, and to have continually enlarged its orifice by the breaking down of its sides. It evidently commenced on the east side, and the continual wear of the under side of the crust on the west side has caused the margin to fall in, until an aperture at least two hundred and fifty feet in diameter has been formed, with walls or sides twenty to thirty feet high, showing the laminæ of deposition perfectly. The water is intensely agitated all the time, boiling like a caldron, from which a vast column of steam is ever rising, filling the orifice. As the passing breeze sweeps it away for a mo-

ment, one looks down into this terrible seething pit with terror. All around the sides are large masses of the silicious crust that have fallen from the rim. An immense column of water flows out of this caldron into the river. As it pours over the marginal slope it descends by numerous small channels, with a large number of smaller ones spreading over a broad surface, and the marvellous beauty of the strikingly vivid coloring far surpasses anything of the kind we have seen in this land of wondrous beauty,—every possible shade of color, from vivid scarlet to a bright rose, and every shade of yellow to a delicate cream, mingled with vivid green from minute vegetation. Some of the channels were lined with a very fine, delicate yellow, silky material, which vibrates at every movement of the waters. There was one most beautiful funnel-shaped spring, twenty feet in diameter at the top, but tapering down, lined inside and outside with the most delicate decorations. Indeed, to one looking down into its clear depths, it seemed like a fairy palace. The same jelly-like substance or pulp to which I have before alluded covers a large area with the various shades of light red and green. The surface yields to the tread like a cushion. It is about two inches in thickness, and although seldom so tenacious as to hold together, yet it may be taken up in quite large masses, and when it becomes dry it is blown about by the wind, like fragments of variegated lichens.

[From this description of the hot springs of the region we proceed to an account of its marvellous geyser phenomena.]

We camped the evening of August 5 in the middle of the Upper Geyser Basin, in the midst of some of the grandest geysers in the world. Colonel Barlow and Captain Heap, of the United States Engineers, were camped on the opposite side of the Fire-Hole. Soon after reaching

camp a tremendous rumbling was heard, shaking the ground in every direction, and soon a column of steam burst forth from a crater near the edge of the east side of the river. Following the steam, arose, by a succession of impulses, a volume of water, apparently six feet in diameter, to the height of two hundred feet, while the steam ascended a thousand feet or more. It would be difficult to describe the excitement which attended such a display. It is probable that if we could have remained in the valley several days, and become accustomed to all the preliminary warnings, the excitement would have ceased, and we could have admired calmly the marvellous ease and beauty with which this column of hot water was held up to that great height for the space of twenty minutes. After the display is over the water settles down in the basin several inches, and the temperature slowly falls to 150°. We called this the "Grand Geyser," for its power seemed greater than any other of which we obtained any knowledge in the valley.

[After describing more particularly the peculiarities of the Grand Geyser and the smaller neighboring geysers, Dr. Hayden gives us an enthusiastic pen-picture of a beautiful type of springs.]

On the summit of the great mound is one of a class I have called central springs; it is located on the highest point of the mound on which this great group belongs; has a crater twenty feet in diameter, very nearly quiescent, slightly bubbling, or boils near the centre, with a thin, elegant rim projecting over the spring, with the water rising within a few inches of the top. The continual but very moderate overflow of this spring, uniformly on every side, builds up slowly a broad-based mound, layer by layer, one-eighth to one-sixteenth of an inch thick. Looking down into these springs, you seem to be gazing into fathomless depths, while the bright blue of the water is unequalled

even by the sea. There are a number of these marvellous central springs, with projecting rims carved with an intricate delicacy which of itself is a marvel; and as one ascends the mound and looks down into the wonderfully clear depths, the vision is unique. The great beauty of the prismatic colors depends much on the sunlight, but about the middle of the day, when the bright rays descend nearly vertically, and a slight breeze just makes a ripple on the surface, the colors exceed comparison; when the surface is calm there is one vast chaos of colors, dancing, as it were, like the colors of a kaleidoscope.

As seen through this marvellous play of colors, the decorations on the sides of the basin are lighted up with a wild, weird beauty which wafts one at once into the land of enchantment; all the brilliant feats of fairies and genii in the "Arabian Nights" entertainments are forgotten in the actual presence of such marvellous beauty; life becomes a privilege and a blessing after one has seen and thoroughly felt these incomparable types of nature's cunning skill. . . .

Our search for new wonders leading us across the Fire-Hole River, we ascended a gently incrustated slope, and came suddenly upon a large oval aperture with scalloped edges, the diameters of which were eighteen and twenty-five feet, the sides corrugated and covered with a grayish-white silicious deposit, which was distinctly visible at the depth of a hundred feet below the surface. No water could be discovered, but we could distinctly hear it gurgling and boiling at a great distance below. Suddenly it began to rise, boiling and spluttering, and sending out huge masses of steam, causing a general stampede of our company, driving us to some distance from our point of observation. When within about forty feet of the surface it became stationary, and we returned to look down upon it. It was foaming and surging at a terrible rate, occasionally

emitting small jets of hot water nearly to the mouth of the orifice.

All at once it seemed seized with a fearful spasm, and rose with incredible rapidity, hardly affording us time to withdraw to a safe distance, when it burst from the orifice with terrific momentum, rising in a column the full size of this immense aperture to the height of sixty feet; and through and out of the apex of this vast aqueous mass five or six lesser jets or round columns of water, varying in size from six to fifteen inches in diameter, were projected to the marvellous height of two hundred and fifty feet. These lesser jets, so much higher than the main column, and shooting through it, doubtless proceed from auxiliary pipes leading into the principal orifice near the bottom, where the explosive force is greater. If the theory that water by constant boiling becomes explosive when freed from air be true, this theory rationally accounts for all irregularities in the eruptions of the geysers.

This grand eruption continued for twenty minutes, and was the most magnificent sight we ever witnessed. We were standing on the side of the geyser nearest the sun, the gleams of which filled the sparkling column of water and spray with myriads of rainbows, whose arches were constantly changing, dipping and fluttering hither and thither, and disappearing only to be succeeded by others, again and again, amid the aqueous columns, while the minute globules into which the spent jets were diffused when falling sparkled like a shower of diamonds, and around every shadow which the denser clouds of vapor, interrupting the sun's rays, cast upon the column, could be seen a luminous circle, radiant with all the colors of the prism, and resembling the halo of glory represented in paintings as encircling the head of Divinity. All that we had previously witnessed seemed tame in comparison with the per-

fect grandeur and beauty of this display. Two of these wonderful eruptions occurred during the twenty-two hours we remained in the valley. This geyser we named the "Giantess."

A hundred yards distant from the Giantess was a silicious cone, very symmetrical, but slightly corrugated upon its exterior surface, three feet in height and five feet in diameter at its base, and having an oval orifice twenty-four by thirty-six and a half inches in diameter, with scalloped edges. Not one of our company supposed that it was a geyser; and among so many wonders it had almost escaped notice. While we were at breakfast upon the morning of our departure, a column of water, entirely filling the crater, shot from it, which, by accurate triangular measurement, we found to be two hundred and nineteen feet in height. The stream did not deflect more than four or five degrees from a vertical line, and the eruption lasted eighteen minutes. We named it the "Beehive." . . .

On our return to the lake from this basin we passed up the Fire-Hole River to its source in the divide. Early in the morning, as we were leaving the valley, the grand old geyser which stands sentinel at the head of the valley gave us a magnificent parting display, and with little or no preliminary warning it shot up a column of water about six feet in diameter to the height of a hundred to a hundred and fifty feet, and by a succession of impulses seemed to hold it up steadily for the space of fifteen minutes, the great mass of water falling directly back into the basin, and flowing over the edges and down the sides in large streams. When the action ceases, the water recedes beyond sight, and nothing is heard but the occasional escape of steam until another exhibition occurs. This is one of the most accommodating geysers in the basin, and during our stay played once an hour quite regularly. On account of

its apparent regularity, and its position overlooking the valley, it was called by Messrs. Langford and Doane "Old Faithful." It has built up a crater about twenty feet high around its base, and all about it are decorations similar to those previously described.

On the morning of August 6 we ascended the mountains at the head of the Fire-Hole River, on our return to the hot-spring camp on the Yellowstone Lake. We had merely caught a glimpse of the wonderful physical phenomena of this remarkable valley. We had just barely gleaned a few of the surface observations, which only sharpened our desire for a larger knowledge. There is no doubt in my mind that these geysers are more active at certain seasons of the year than at others. We saw them in midsummer, when the surface waters are greatly diminished. In the spring, at the time of the melting of the snows, the display of the first-class geysers must be more frequent and powerful. We left this valley, with its beautiful scenery, its hot springs and geysers, with great regret.

THE COUNTRY OF THE CLIFF-DWELLERS.

ALFRED TERRY BACON.

[Ruskin, among his reasons for not visiting the United States, declared that it would be impossible for him to exist, even for a short interval, in a country that had no old castles. Had he known it, he might have found here old castles in abundance, older perhaps, and grander in situation, than any to be found in his own land. These are the ruined dwellings of the ancient inhabitants of the western cañons and of the pueblo-builders of Arizona and New Mexico. We give a traveller's account of the Cliff-dwellers' habitations.]

THE attraction which drew the conquerors of Mexico forty-five days' journey away into the North was the fame

which had reached them of the Seven Cities of Cibola (the buffalo), great in wealth and population, lying in the valley of the Rio de Zuñi. To the grief of the invaders, they found not cities, but rather villages of peaceful agricultural people dwelling in great pueblos three and four stories high, and they searched in vain for the rumored stores of gold. At that time the pueblos held a large population skilled in many arts of civilization. They cultivated large tracts of ground, wove fabrics of cotton, and produced ornate pottery. Their stone-masonry was admirable. But even three hundred years ago it seems that the people were but a remnant of what they had once been. Even then the conquerors wondered at the many ruins which indicated a decline from former greatness. The people have not now the same degree of skill in their native arts which the race once had, and it is probable that when the Spaniards came and found them declining in numbers the old handicrafts were already on the wane.

In a remote age the ancestors of these Pueblo tribes, or a race of kindred habits, filled most of that vast region which is drained by the Colorado River and its affluents, and spread beyond into the valley of the Rio Grande. The explorers of a great extent of country in Utah, Arizona, New Mexico, and Colorado have found everywhere evidences of the wide distribution and wonderful industry of that ancient people. On the low land which they used to till lie the remains of their villages,—rectangular buildings of enormous dimensions and large circular *estufas*, or halls for council and worship. On the sides of the savage cliffs that wall in or overarch the cañons are scattered in every crevice and wrinkle those strange and picturesque ruins which give us the name "Cliff-dwellers" to distinguish this long-forgotten people. And on commanding points, seen far away down the cañons or across the mesas, stand the solitary

watch-towers where sentinels might signal to the villagers below on the approach of Northern barbarians. . . .

There is no other district which embraces in so small a compass so great a number and variety of the Cliff-dwellers' ruined works as the cañon of the Little Rio Mancos in Southwestern Colorado. The stream rises in a spur of the San Juan Mountains, near the remote mining-camp called Parrott City. Flowing southward for a few miles through an open valley, it is soon enclosed between the walls of a profound cañon which cuts for nearly thirty miles through a table-land called the Mesa Verde. The cañon is wide enough to have permitted the old inhabitants to plant their crops along the stream, and the cliffs rising on either side to a height of two thousand feet are so curiously broken and grooved and shelving, from the decay of the soft horizontal strata and the projection of the harder, as to offer remarkable facilities for building fortified houses hard of approach and easy of defence. Therefore the whole length of the cañon is filled with ruins, and for fifteen miles beyond it to the borders of New Mexico, where the river meets the Rio San Juan, the valley bears many traces of the ancient occupation.

The scenery of the cañon is wild and imposing in the highest degree. In the dry Colorado air there are few lichens or weather-stains to dull the brightness of the strata to the universal hoariness of moister climates: the vertical cliffs, standing above long slopes of débris, are colored with the brilliant tints of freshly-quarried stone. A gay ribbon of green follows the course of the rivulet winding down through the cañon till it is lost to sight in the vista of crags. The utter silence and solitude of the wilderness reigns through the valley. It is not occupied by any savage tribe, and only a few white men within the last few years have passed through it and told of its won-

ders; and yet its whole length is but one series of houses and temples that were forsaken centuries ago. I can hardly imagine a more exciting tour of exploration than that which Mr. Jackson's party made on first entering this cañon in 1874.

Above the entrance of the cañon the evidences of pre-historic life begin. On the bottom-land, concealed by shrubbery, are the half-obliterated outlines of square and circular buildings. The houses were of large size, and were plainly no temporary dwelling-places, for an accumulation of decorated pottery fills the ground about them, indicating long occupation. No doubt they were built of adobe,—masses of hard clay dried in the sun,—which the wear of ages has reduced to smoothly-rounded mounds. For some miles down the cañon remains of this sort occur at short intervals, and at one point there stands a wall built of squared sandstone blocks. Along the ledges of the cliffs on the right bits of ruinous masonry are detected here and there, but for a time there is nothing to excite close attention. At last a watchful eye is arrested by a more interesting object perched at a tremendous height on the western wall of the cañon. It is a house built upon a shelf of rock between the precipices, but, standing seven hundred feet above the stream and differing not at all in color from the crags about it, only the sharpest eyesight can detect the unusual form of the building and the windows marking the two stories.

The climb up to the house-platform is slow and fatiguing, but the trouble is repaid by a sight of one of the most curious ruins on this continent. Before the door of the house, part of the ledge has been reserved for a little esplanade, and to make it broader three small abutments of stone, which once supported a floor, are built on the sloping edge of the rock. Beyond this the house is

entered by a small aperture which served as a door. It is the best specimen of a Cliff-dweller's house that remains to our time. The walls are admirably built of squared stones laid in a hard white mortar. The house is divided into two stories of three rooms each. Behind it a semicircular cistern nearly as high as the house is built against the side of it, and a ladder is arranged for descending from an upper window to the water-level. The floor of the second story was supported by substantial cedar timbers, but only fragments of them remain. The roof, too, has entirely disappeared, but the canopy of natural rock overhanging serves to keep out the weather. The front rooms in both stories are the largest and are most carefully finished. Perhaps they were the parlor and "best bedroom" of some prehistoric housewife. They are plastered throughout with fine smooth mortar, and even in that remote age the mania for household decoration had a beginning: floor, walls, and ceiling were colored a deep red, surrounded by a broad border of white.

The same cliff on which this house stands has on its side many other ruins; some half destroyed by gradual decay, some crushed by falling rocks, none so perfect as the one described; but all are crowded into the strangest unapproachable crevices of the cañon-wall, like the crannies which swallows choose to hold their nests, far removed from the possibility of depredation. Some are so utterly inaccessible that the explorers, with all their enthusiasm and activity, have never been able to reach them. How any beings not endowed with wings could live at such points it is hard to conceive: it makes one suspicious that the Cliff-dwellers had not quite outgrown the habits of monkey ancestors.

As the cañon widens with the descent of the stream, the ruins in the western wall increase in number. One fear-

ful cliff a thousand feet in height is chinked all over its face with tiny houses of one room each, but only a few of them can be detected with the naked eye. One, which was reached by an explorer at the peril of his life, stands intact: ceiling and floor are of the natural rock, and the wall is built in a neat curve conforming to the shape of the ledge.

A mile farther down the stream there is a most interesting group of houses. Eight hundred feet above the valley there is a shelf in the cliff sixty feet in length that is quite covered by a house. The building contains four large rooms, a circular sacred apartment and smaller rooms of irregular shape. It was called by its discoverers "The House of the Sixteen Windows." Behind this house the cliff-side rises smooth and perpendicular thirty feet, but it can be scaled by an ancient stairway cut into it which ascends to a still higher ledge. The stairs lead to the very door of another house filling a niche a hundred and twenty feet long. A great canopy of solid rock overarches the little fortress, reaching far forward beyond the front wall, while from below it is absolutely unapproachable except by the one difficult stairway of niches cut in the rock. In time of war it must have been impregnable. These dwellings have given more ideas about their interior furnishing than any of the others. Among the accumulated rubbish were found corn and beans stored away. In the lower house were two large water-jars of corrugated pottery standing on a floor covered with neatly-woven rush matting. In a house not far above were found a bin of charred corn, and a polished hatchet of stone made with remarkable skill.

From this point onward both the valley and the cliffs are filled with the traces of a numerous population, every mile of travel bringing many fresh ones into sight. Among the cliff-houses there is of necessity a variety in form and

size as great as the differences of the caves and crevices that hold them; but among the buildings of the low ground there is more uniformity, not only in this cañon, but in all the valleys of the region. Most of them may be classed as aggregated dwellings or pueblos with rectangular rooms, round watch-towers and large circular buildings. To these must be added a few which seem to have been built only for defence. The straight walls have generally fallen, except the parts supported by an angle of a building; but, as usual in old masonry, the circular walls have much better resisted decay.

About midway down the cañon the curved wall of a large ruin rises above the thicket. It is a building of very curious design. The outer wall was an exact circle of heavy masonry a hundred and thirty feet in circumference. Within, there is another circular wall, concentric with the outer, enclosing one round room with a diameter of twenty feet. The annular space between the two walls was divided by partitions into ten small apartments. Other buildings of the same type occur in this region, some of much larger size and with triple walls. Even in this one, which is comparatively well preserved, the original height is uncertain, though the ruin still stands about fifteen feet high.

The vast quantity of débris about some of them indicates that they were of no significant height, and their perfect symmetry of form, the careful finish of the masonry, the large dimensions and great solidity, made them the most imposing architectural works of that ancient people. I find no reason to doubt that they were their temples, and the presumption is very strong that they were temples for sun-worship. The occurrence of a circular room in connection with nearly every group of buildings is of special interest, as seeming to link the Cliff-

dwellers to the modern Pueblo tribes in their religious customs.

Most striking and picturesque of all the ruins are the round watch-towers. On commanding points in the valley, and on the highest pinnacles of the cliffs overlooking the surface of the mesa, they occur with a frequency which is almost pathetic as an indication of the life of eternal vigilance which was led by that old race through the years, perhaps centuries, of exterminating warfare which the savage red men from the North waged upon them. To us the suffering of frontier families at the hands of the same blood-thirsty savages is heartrending. What was it to those who saw year by year their whole race's life withering away, crushed by those wild tribes?

Near the lower end of the cañon stands one of the most perfect of these towers, rising sixteen feet above the mound on which it is built. It was once attached to an oblong stone building which seems to have been a strongly-fortified house. The rectangular walls, as usual, are prostrate, and have left the tower standing as solitary and picturesque and as full of mystery as the round-towers of Ireland. . . .

In the Montezuma Cañon, just beyond the Colorado State border, there are some remains built after an unusual manner with stones of great size. One building of many rooms, nearly covering a little solitary mesa, is constructed of huge stone blocks not unlike the pre-historic masonry of Southern Europe. In the same district there is a ruined line of fortification from which the smaller stones have fallen away and are crumbling to dust, leaving only certain enormous upright stones standing. They rise to a height of seven feet above the soil, and the lower part is buried to a considerable depth. Their resemblance to the hoary Druidical stones of Carnac and Stonehenge is striking, and

there is nothing in their appearance to indicate that they belong to a much later age than those primeval monuments of Europe.

All the certain knowledge that we have of the history and manners of the Cliff-dwellers may be very briefly told, for there is no written record of their existence, except their own rude picture-writing, cut or painted on the cañon walls, and it is not likely that those hieroglyphics will ever be deciphered. But much may be inferred from their evident kinship to the Moquis of our time; and the resemblance of the ancient architecture and ceramics to the arts as they are still practised in the degenerate pueblos of Arizona gives us many intimations in regard to the habits of the Cliff-dwellers.

It was centuries ago—how long a time no one will ever know,—when that old race was strong and numerous, filling the great region from the Rio Grande to the Colorado of the West, and from the San Juan Mountains far down into Northern Mexico. They must have numbered many hundreds of thousands, perhaps millions. It is not probable that they were combined under one government, or that they were even closely leagued together, but that they were essentially one in blood and language is strongly indicated by the similarity of their remains. That they were sympathetic in a common hostility to the dangerous savage tribes about them can hardly be doubted. They were of peaceful habits and lived by agriculture, having under cultivation many thousands of acres in the rich river-bottoms, which they knew well how to irrigate from streams swollen in summer by the melting snows of the high mountain-ranges. We read of their dry canals in Arizona, so deep that a mounted horseman can hide in them. We know that they raised crops of corn and beans, and in the south cotton, which they skilfully wove. That



HOMES OF THE CLIFF-DWELLERS.

they had commercial dealing across their whole country is shown by the quantity of shell-ornaments brought from the Pacific coast, which are found in their Colorado dwellings. They did not understand the working of metals, but their implements of stone are of most excellent workmanship. Their weapons indicate the practice of hunting, and while the race was still numerous their forts and their sharp obsidian arrows made easy their resistance to the wandering savage hordes.

I believe that no instance can be cited of a people still in their Stone Age who have surpassed that old race in the mason's art: indeed, I doubt if any such people has even approached their skill in that respect. The difficulty of constructing a great work of well-squared, hammer-dressed stones is enormously increased if the masons must work only with stone implements. Imagine the infinite, toilsome patience of a people who in such a way could rear the ancient Pueblo Bonito of New Mexico, five hundred and forty feet long, three hundred and fourteen feet wide, and four stories high! In one wall of a neighboring building of stone less carefully dressed it is estimated that there were originally no less than thirty million pieces, which were transported, fashioned, and laid by men without a beast of burden or a trowel, chisel, or hammer of metal. . . .

At the time of the Spanish conquest the Pueblo tribes were worshippers of the sun and fire, like all the races of this continent which were above barbarism. To-day, even in those pueblos where a corrupted form of the Roman faith is accepted, there are traces of the old sun-worship mingled with it, and in all pueblos there are large circular rooms, called *estufas*, reserved for councils and for worship. The invariable appearance of *estufas* among the ruined towns, and even on the ledges of the cliffs, shows what

sacredness was attached to the circular room, which, perhaps, was symbolic of the sun's orb: it indicates a unity of religious faith between the ancients and moderns.

LAKE TAHOE AND THE BIG TREES.

A. H. TEVIS.

[To Rev. A. H. Tevis, author of "Beyond the Sierras; or, Observations on the Pacific Coast," we owe the following description of a most charming example of American lake scenery, one of the varied and striking regions of beauty which California offers to the tourist.]

OF the many curiosities that nature has scattered over the length and breadth of this coast, Lake Tahoe is one of the most charming.

This is a land of wonders, certainly of curiosities. Providence has made this vast area, between the Rocky Mountains and the sea, his chief receptacle of the wealth of the country. And what folly to travel in foreign countries to see the sights until you have at least seen some of the wonders and treasures of our own great Commonwealth! You can spend your life in exploring these various wonders, and then not find an end,—petrified forests; lost rivers, whose *termini* no one knows, and of whose source there is great doubt; brackish lakes, whose waters are worse than the Dead Sea, and in which no living thing can exist; bubbling, hissing, thundering geysers, whose awfulness impresses the hardest heart; roaring cataracts, that with a band of silver seem to bind together earth and sky; boiling springs, hither and yon in almost countless profusion, that send their breath of steam as through the throats of some great furnace from Vulcan's forge; geo-

graphical and topographical features that are marvellous in themselves; the big trees, whose magnitude is a wonder, and whose age links the present almost to the days of Solomon; Yosemite, unlike anything of the kind in the known world, whose sublimity is beyond description; and charming, silvery, unique Tahoe, or Pearl of the Sierras.

There is no patent on the name, hence we have chosen to christen it thus. And who will say it is a misnomer that has seen its grandeur and enjoyed the beauty of its surroundings? Its name belongs to the Indian tongue, and signifies *clear water*.

This lake in its greatest length is twenty-three miles, and greatest width eleven miles; hence it has an area of two hundred and fifty-three square miles. Its altitude is six thousand two hundred and twenty feet above the level of the sea. Here, spread out before me, like the finest of burnished silver, is a lake unlike any other body of water in the world, save one in Switzerland, and that has only a few marks of similarity.

This lies nestled away, like a very jewel, in the summit of the Sierras,—the Alps of America,—at an altitude of a mile and a quarter above the level of the sea. Think of it! A body of water containing an area of more than two hundred and fifty square miles, and deep enough to float the largest vessel that ever traversed the sea, and then have almost immeasurable depths below the keel; think of this being in the very summit of the greatest range of mountains in America!

It has been sounded along the line between Nevada and California, which runs through the lake, to the distance of two hundred and fifty-three fathoms, or fifteen hundred and eighteen feet. But other places have been sounded to the great distance of nearly twenty-five hundred feet. The character of the water is almost incredible to one who has

never looked upon it. Coming down from the springs that burst from the cañons, and the everlasting snows that crown the mountain-tops, where

“ 'Tis the felt presence of the Deity,”

the water is almost perfectly pure.

I have leaned over the side of the boat and watched the play of the trout a *hundred and fifty feet* below the surface. I have dropped a small, shining, metallic button, and watched distinctly its oscillations in sinking for three or four minutes.

The transparent nature of the water is best seen in the morning, when the lake is perfectly calm; not even the small surface ripples that nearly always exist on ordinary streams and lakes are visible.

The various angles of vision present the most charming scene. Yonder the lake looks like a quiet mass of molten silver; yonder, where the rays of the sun meet you, is a gorgeous array of crimson and gold; then there is a range of purest emerald, deepening into blue-black as the scene stretches away from you, bespangled in the distance by the rising white-caps. This, fringed with the green of the deep pine-forests that skirt the mountains, and capped with the everlasting snows, made radiant with the flood of sunlight, furnishes a picture of incomparable beauty, and worthy of a master's brush.

But here by you, right at your feet, is one of the most pleasing features of all: so still in the morning quietness, and such air-like purity withal. You think you can reach down and pick up those shining pebbles, and yet they are twenty, thirty, or forty feet beneath you. And that boat or skiff seems to be poised in mid-air. You can count the small indentures and nail-heads in the very keel.

You cringe with fear as your boat glides towards that huge boulder, as large as a church, thinking surely your

vessel will be wrecked; but there is no danger, as the rock is many feet beneath you. The transparency of the water makes the danger seem so near.

How often have I wished this place—mountains, lake, and all—could be the place of one of the grand Eastern camp-meetings! This bracing air, this unique spot, this wonderful lake, this rich, healthful aroma of deep pine-forests, this grand scenery, all combined, make it one of the best of places for religious summer resort.

Yonder is a quaint spot, a veritable Gibraltar on a small scale, a lonely, rocky island in the centre of Emerald Bay. Some foolish man built a tomb in the solid rock on its summit, intending to be buried there, where the marks of decay would come slowly over his grave, and where he might sleep undisturbed amid the incomparable grandeur that would have surrounded him. His sarcophagus and all were prepared, but the treacherous billows of the lake, that occasionally foam and roar with fury, seized him, and he lies buried at the bottom,—no man knows where, for no one going down ever comes up again from these waters.

It was first an artless, genial party of three of us that drank in the poetry of the scenery around Lake Tahoe. The “elect lady,” whose presence has ever been an inspiration and encouragement in life’s blackest, bitterest hours, her best and dearest friend, Miss Torreyson, and the writer, made up the trio. We were joined by and by with a party of others kindred in spirit, who entered into all our schemes and reconnoissances after pleasure.

Those were memorable six weeks; and now, at this distance of many months on the road of time, that period of frolic and recuperation gleams as with the radiance of youth’s happiest sunset scene. How strange that happy days even never look so charming as when they are mel-
lowed in the deep past! . . .

During the days we enlivened many a bright morning hour with boat-riding, fishing, gathering wild-flowers, and such other amusements as this delightful place afforded. On one of these fishing excursions one of our party came very near falling into the treacherous waters of the lake.

Our favorite resorts, and it is so with all tourists, were Emerald and Carnelian Bays. The former is a beautiful, land-locked arm of the lake, walled in by rugged and towering cliffs. The latter is a long, gravelly beach, where by the hour we have searched for carnelian stones, of which some of the purest quality are found.

The mountains and cañons are most delightful points of interest as places of observation and rest, and often charm by the echoes they throw back. We were given to song; and many a time summering here, and travelling over the lake, we united in singing the "Evergreen Mountains of Life" and "A Thousand Years," our favorite lake airs; the former suggested, no doubt, by the towering mountains that surrounded us. The effect is peculiarly fascinating, as the song rings out over the waters, in the pure mountain air, and echoing dies away, after many reverberations of "evergreen mountains of life"—"mountains of life"—"life"—in some deep cañon. Or "a thousand years, Columbia,"—"years, Columbia,"—"Columbia,"—the vowels of the last becoming beautifully distinct in the echoes.

Nearly south of the head of Lake Tahoe, a distance of perhaps a mile and a half, is a little lake that bears the name of Fallen Leaf; and then to the west of this some three miles is Cascade Lake, as charming a little body of water as ever flashed back the sunlight. Of all the objects of interest here, none of its kind is more interesting than this delightful lake, that spreads itself out a half-mile by a

mile and a half, and that at an altitude of four or five hundred feet above Tahoe.

Above this, from the summit of Tallac Mountain, it is positively asserted *seventeen* lakes, varying in size, can be seen at one glance nestled away like a cluster of diamonds in the bosom of the Sierras. All these lakes abound with the finest of trout, and are surrounded by the best of game.

On the east side of Tahoe are Cave Rock and Shakespeare Rock. The former is a bald precipitous peak, that presses its perpendicular side almost to the water's edge, leaving just room enough for the road of the old overland stage-coach. Under this rock is a cave of small pretensions, but with the wild scenery, the bald, dizzy height of the cliff, and the fine view of the lake, it is one of the many frequented places.

Shakespeare Rock stands back perhaps full half a mile from the landing at Pray's Bay, or Glenbrook. It is a perpendicular cliff of well on towards a thousand feet above the waters of the lake. It has its name from a well-defined portrait of a man, moss-formed or wind-chiselled, doubtless, that is seen plainly several hundred feet up the rugged side. It is said to look very much like the old bard of Stratford-upon-Avon. But of this we cannot say; we never saw him.

It was on one of Nature's brightest days that our trio, lunch-armed, toiled up its rugged side, the only accessible point, and flung our handkerchief banners to the breeze from the improvised flag-staff, while we grew enraptured at the rich perspective from the dizzy height. It seemed almost like being on "cloud's rest" as some cloud's shadow fell upon us while there.

Below us lay the bustling, thriving village of Glenbrook, having, perhaps, well on towards a thousand souls as the

number of its inhabitants; increased by tourists, and, of course, largely diminished in the winter months, when business here "shuts down." The temperature, however, is generally fine from the last of April to the first of November, or even later. It is not unpleasant now, as I write,—the middle day of January,—to be out boat-riding or rambling by the shore.

This is the outlet of the entire lake and its surroundings; an immense traffic in lumber, etc., is carried on. Five saw-mills give life and activity to the place, as they cut nearly three hundred thousand feet per day, or more than fifty millions during the business months of the year. A hotel, store, post-office, with daily mail, and telegraph-office, add to the convenience of the place. There are six steamers on the lake that run for pleasure-parties and traffic.

From the lake one of the most unique railroads ever built runs to the summit, a distance of nine miles by the route travelled, although the distance by an air line is but three, while the elevation that it gains is eight hundred and fifty feet. It climbs the mountain by zigzag movements, like a letter Z, the engine sometimes hauling its burden, and sometimes pushing the train. More than a quarter of a million of dollars were required to build and stock this novel short line. It is a rare evidence of engineering skill, and certainly is a good illustration of Western enterprise. It lacks at least a dozen miles of connecting with any other railroad point, and its engines, rolling-stock, etc., had to be hauled up the mountain eight thousand feet high.

[To this description of the liquid marvel of California we add the author's account of one of its land marvels, a grove of the "big trees," the vegetable giants of the world.]

The Big Trees, as they are technically called, are of a light, bright cinnamon color, and have a diameter at the ground of from twenty-five to forty feet, a height of from three hundred to four hundred and fifty feet, and a bark that will average one foot and a half in thickness where it has not been molested. I have seen blocks of bark that would measure thirty-two inches in thickness, and I have no doubt but some trees have bark that would average nearly three feet. The texture is loose and spongy, and when cut transversely it is often worked into pincushions and such like toys. The wood is light as the cedar, but is susceptible of a very fine polish. I had a cane made from a piece that I bought of the guide, and I found it would polish equal to mahogany. The Mariposa grove is a State park, together with Yosemite Valley, given by the United States government.

This grove, "together with the Yosemite Valley with its branches and spurs, an estimated length of fifteen miles, and in average width one mile back from the edge of the precipice on each side of the valley, with the stipulation, nevertheless, that the State shall accept this grant on the express condition that the premises shall be held for public use and recreation, and shall be inalienable for all time." So it is absolutely impossible to get a bit of bark or piece of wood except from the guide, who is allowed to gather them from the outskirts of the grove from a tree that has fallen or one that stands outside of the prescribed limits.

There has but one fallen, however, since their discovery, and that was felled by men's hands. It was done by immense augers. It took five men twenty-two days to fell the tree, equal to the services of one man for *one hundred and ten days*. Think of that, nearly four months' work, not counting any time lost by Sundays, or rainy days, or sickness, to fell one tree! That tree would have yielded

more than a thousand cords of four-foot wood and a hundred cords of bark, more than eleven hundred cords altogether. On the stump of this tree there is a house—"whose foundation is sure"—thirty feet in diameter. This house contains room enough in square feet, if it were the right shape, for a parlor twelve by sixteen, a dining-room ten by twelve, a kitchen ten by twelve, two bedrooms ten feet square each, a pantry four by eight feet, two clothes-presses one and a half feet deep and four feet wide, and still have a little to spare.

The foliage of these trees resembles the cedar somewhat. They bear a cone not more than two inches in length, and a black pitch bitter as gall. The forests at present have a gloomy appearance, as some time in the past, no one knows when, the Indians, the better to facilitate their hunting, burned off the chaparral and rubbish, and, as a matter of course, disfigured the trees by burning off nearly all the bark.

The first sight of these monarchs is one of sore disappointment. For you have travelled many miles where the trees are all large, and here, surrounded as they are by immense pines, their magnitude is not appreciated. But their greatness grows very rapidly upon you, so that if there was at first disappointment, there is now a greater awe. Our first view of interest was the Fallen Monarch, a ponderous old trunk stretched out upon the ground for more than two hundred feet, upon which a stage and four horses could be driven with ease. We had to go a hundred feet towards the top to climb upon the trunk. The diameter of this tree, without bark, at the base is twenty-two feet; one hundred feet from the root it is twelve feet.

How long this monarch has been sleeping no one pretends to know. The guide says it is no more decayed now, to all appearances, than it was when first discovered. The tree of greatest interest is the Grizzly Giant, which has

an altitude of more than three hundred feet. The first thing we did to try its magnitude was to surround it on horseback, passing around in single file, the head of one horse to the tail of another. It called into requisition twenty-five horses out of the twenty-eight in our party to complete the measurement. This is not considered strictly correct, mathematically speaking, but it indicates the size of the tree by *horse measurement*.

I had prepared myself with a good-sized string, and, with the help of a friend, made close calculation four feet from the ground, and found it to be ninety-three feet, giving a diameter of thirty-one feet. This tree has a limb one hundred feet from the ground that is six feet in diameter. These trees stand around us in quiet grandeur, but to write of one is to write of many, hence the reader must not be wearied with a notice of each. Pluto's Chimney is a hollow tree, standing upright, into which several of us rode on horseback. Yonder is another that had fallen in some past age, and sixty feet or more of it had burned from the root upward, and then towards the top had burned in two, leaving a barrel-shaped or hollow part of the trunk some fifty feet in length. Through this we all rode without any inconvenience. I have understood that several have ridden abreast through it, which I do not think improbable.

This completed our tour among these forest giants. There are two groves—and, properly speaking, but two—of these *Sequoia gigantea*, the Mariposa and Calaveras groves. The first is about twenty miles south of Yosemite Valley, perhaps a little more, while the latter is some fifty miles northwest of the valley. Thus it will be seen that they are not, as many suppose, in the great Yosemite Valley.

The big trees of California, not of this species, however, are not confined to these two groves. Many of the noted

redwood species (*Sequoia sempervirens*) used to grow back of Santa Cruz, many of which are standing yet that were very great in size. We once upon a time, with five others, rode into one of these during a storm. The butt was hollow, and large enough to hold at least twelve men on horseback, and was not less than two hundred and fifty feet in height.

THE CHINESE QUARTER IN SAN FRANCISCO.

HELEN HUNT JACKSON.

[We need not tell who Helen Hunt Jackson is. She is well known to American readers both of verse and prose for her excellent ability in both these fields of literature. Born in 1831, at Amherst, Massachusetts, the daughter of Professor N. W. Fiske, she married first Mr. Hunt, of the United States Engineer Corps, and after his death a Mr. Jackson. She died in 1885. From her work entitled "Bits of Travel at Home," a series of racy sketches of experience east and west, we extract her narrative of the odd and amusing things she saw in the Chinese quarter of San Francisco.]

SING, Wo & Co. keep one of the most picturesque shops on Jackson Street. It is neither grocer's, nor butcher's, nor fishmonger's, nor druggist's; but a little of all four. It is like most of the shops on Jackson Street, part cellar, part cellar-stairs, part sidewalk, and part back bedroom. On the sidewalk are platters of innumerable sorts of little fishes,—little silvery fishes; little yellow fishes, with whiskers; little snaky fishes; round flat fishes; little slices of big fishes,—never too much or too many of any kind. Sparing and thrifty dealers, as well as sparing and thrifty consumers, are the Celestials. Round tubs of sprouted beans; platters of square cakes of something whose consistency was like Dutch cheese. whose color was vivid

yellow, like baker's gingerbread, and whose tops were stamped with mysterious letters; long roots, as long as the longest parsnips, but glistening white, like polished turnips; cherries, tied up in stingy little bunches of ten or twelve, and swung in all the nooks; small bunches of all conceivable green things, from celery down to timothy grass, tied tight and wedged into corners, or swung overhead; dried herbs, in dim recesses; pressed chickens, on shelves (those were the most remarkable things. They were semi-transparent, thin, skinny, and yellow, and looked almost more like huge, flattened grasshoppers than like chickens; but chickens they were, and no mistake),—all these were on the trays, on the sidewalk, and on the cellar-stairs.

In the back bedroom were Mrs. Sing and Mrs. Wo, with several little Sings and Wos. It was too dark to see what they were doing; for the only light came from the open front of the shop, which seemed to run back like a cave in a hill. On shelves on the sides were teacups and teapots, and plates of fantastic shapes and gay colors. Sing and Wo were most courteous; but their interest centred entirely on sales; and I could learn but one fact from them in regard to any of their goods. It was either "Muchee good. Englis man muchee like," or else, "China man like; Englis man no like." Why should I wish to know anything further than that some articles would be agreeable to "Englis man's" palate, and others would not? This must be enough to regulate my purchases. But I shall always wish I knew how those chickens were fattened and what the vivid yellow cakes were made of.

[Next our traveller looks into the shop of Ty Wing & Co., where nothing appears but darkness, dust and cobwebs, and two Chinese women eating something unknown with chopsticks; that of Chick Kee, a druggist, with feathers and banners without and nothing but

old dried roots visible within ; and of Tuck Wo, a restaurant-keeper, where nothing is visible that she has the courage to taste.]

Moo, On & Co. come next. Their shop is full, crowded full,—bags, bundles, casks, shelves, piles, bunches of utterly nondescript articles. It sounds like an absurd exaggeration, but it is literally true, that the only articles in his shop which I ever saw before are bottles. There are a few of those ; but the purpose, use, or meaning of every other article is utterly unknown to me. There are things that look like games, like toys, like lamps, like idols, like utensils of lost trades, like relics of lost tribes, like—well, like a pawnbroker's stock, just brought from some other world. That comes nearest to it.

Moo, On & Co. have apparently gone back for more. Nobody is in the shop ; the door is wide open. I wait and wait, hoping that some one will come along who can speak English, and of whom I may ask what this extraordinary show means. Timidly I touch a fluttering bit, which hangs outside. It is not paper ; it is not cloth ; it is not woollen, silk, nor straw ; it is not leather ; it is not cobweb ; it is not alive ; it is not dead ; it crisps and curls at my touch ; it waves backward, though no air blows it. A sort of horror seizes me. It may be a piece of an ancestor of Moo's doing ghostly duty at his shop door. I hasten on and half fancy that it is behind me, as I halt before Dr. Li Po 'Tai's door. His promises to cure, diplomas, and so forth, are printed in gay-colored strips of labels on each side. Six bright balloons swing overhead ; and peacocks' feathers are stuck into the balloons. I have heard that Dr. Li Po Tai is a learned man, and works cures. His balloons are certainly very brilliant. . . .

Then comes a corner stand, with glass cases of candy. Almond candy, with grains of rice thick on the top ; little bowls of pickles, pears, and peppers ; platters of odd-shaped

nuts; and beans baked black as coffee. As I stand looking curiously at these, a well-dressed Chinaman pauses before me, and making a gesture with his hand towards the stand, says, "All muchee good. Buy eat. Muchee good." Hung Wung, the proprietor, is kindled to hospitality by this, and repeats the words, "Yaas, muchee good. Take, eat," offering me, with the word, the bowl of peppers.

Next comes a very gay restaurant, the best in the empire. Hang Fee, Low & Co. keep it, and foreigners go there to drink tea. There is a green railed balcony across the front, swinging full of high-colored lanterns, round and square; tablets with Chinese letters on bright grounds are set in panels on the walls; a huge rhinoceros stands in the centre of the railing: a tree grows out of the rhinoceros's back, and an India rubber man sits at the foot of the tree. China figures and green bushes in flower-pots are ranged all along the railing. Nowhere except in the Chinese Empire can there be seen such another gaudy, grotesque house front. We make an appointment on the spot to take some of Hang Fee's tea, on our way to the Chinese Theatre, the next evening, and then we hurry home. . . .

After all, we did not take tea at Hang Fee's on our way to the theatre. There was not time. As it was, we were late; and when we entered the orchestra had begun to play. Orchestra! It is necessary to use that name, I suppose, in speaking of a body of men with instruments, who are seated on a stage, furnishing what is called music for a theatrical performance. But it is a term calculated to mislead in this instance. Fancy one frog-pond, one Sunday-school with pumpkin whistles, one militia training, and two gongs for supper, on a Fall River boat, all at once, and you will have some faint idea of the indescribable noise which saluted our ears on entering that theatre. To say

that we were deafened is nothing. The hideous hubbub of din seemed to overlap and transcend all laws and spheres of sound. It was so loud we could not see; it was so loud we could not breathe; it was so loud there did not seem to be any room to sit down! The theatre was small and low and dark. The pit and greater part of the gallery were filled with Chinamen, all smoking. One corner of the gallery was set aside for women. That was full, also, with Chinese women. Every woman's hair was dressed in the manner I have described ["drawn back from her forehead, twisted tight from the nape of the neck to the crown of the head, stiffened with glue, glistening with oil, and made into four huge double wings, which stood out beyond her ears on either side. It looked a little like two gigantic black satin bats, pinned to the back of her head, or still more like a windmill gone into mourning."] The bat-like flaps projected so far on each side of each head that each woman seemed almost to be joined to her neighbors by a cartilaginous band; and, as they sat almost motionless, this effect was heightened.

The stage had no pretence of secrecy. It was hung with gay banners and mysterious labels. Tall plumes of peacock's feathers in the corners and some irregularly placed chairs were all the furniture. The orchestra sat in chairs at the back of the stage. Some of them smoked in the intervals, some drank tea. A little boy who drummed went out when he felt like it; and the fellow with the biggest gong had evidently no plan of operations at all except to gong as long as his arms could bear it, then rest a minute, then gong again.

"Oh, well," said we, as we wedged and squeezed through the narrow passage-way which led to our box, "it will only last a few minutes. We shall not entirely lose our hearing." Fatal delusion. It never stopped. The actors came out;

the play began; the play went on; still the hideous hubbub of din continued, and was made unspeakably more hideous by the voices of the actors, which were raised to the shrillest falsetto to surmount the noise, and which sounded like nothing in nature except the voices of frantic cats. . . .

At first, in spite of the deafening loudness of the din, it is ludicrous beyond conception. To see the superbly dressed Chinese creatures,—every one of them as perfectly and exquisitely dressed as the finest figures on their satin fans or rice-paper pictures, and looking exactly like them,—to see these creatures strutting and sailing and sweeping and bowing and bending, beating their breasts and tearing their beards, gesticulating and rushing about in an utterly incomprehensible play, with caterwauling screams issuing from their mouths, is for a few minutes so droll that you laugh till tears run, and think you will go to the Chinese Theatre every night as long as you stay in San Francisco. I said so to the friend who had politely gone with me. He had been to the performance before. He smiled pityingly, and yawned behind his hand. At the end of half an hour, I whispered, "Twice a week will do." In fifteen minutes more, I said, "I think we will go out now. I can't endure this racket another minute. But, nevertheless, I shall come once more, with an interpreter. I must and will know what all this mummery means."

The friend smiled again incredulously. But we did go again, with an interpreter; and the drollest thing of all was to find out how very little all the caterwauling and rushing and bending and bawling and sweeping and strutting really meant. The difficulty of getting an interpreter was another interesting feature in the occasion. A lady, who had formerly been a missionary in China, had promised to go with us; and, as even she was not sure of

being able to understand Chinese caterwauled, she proposed to take one of the boys from the missionary school, to interpret to her before she interpreted to us. So we drove to the school. Mrs. — went in. The time seemed very long that we waited. At last she came back, looking both amused and vexed, to report that not one of those intelligent Christian Chinese would leave his studies that evening to go to the theatre.

“I suppose it is an old story to them,” said I.

“Not at all,” said she. “On the contrary, hardly a boy there has been inside the theatre. But they cannot bear to lose a minute from their lessons. Mr. Loomis really urged some of them; but it was of no use.”

In a grocery store on Kearney Street, however, we found a clever young man, less absorbed in learning; and he went with us as interpreter. Again the same hideous din; the same clouds of smoke; the same hubbub of caterwauling. But the *dramatis personæ* were few. Luckily for us, our first lesson in the Chinese drama was to be a simple one. And here I pause, considering whether my account of the play will be believed. This is the traveller's great perplexity. The incredible things are always the only things worth telling; but is it best to tell them?

The actors in this play were three,—a lady of rank, her son, and her man cook. The play opened with a soliloquy by the lady. She is sitting alone, sewing. Her husband has gone to America; he did not bid her farewell. Her only son is at school. She is sad and lonely. She weeps.

Enter boy. He asks if dinner is ready.

Enter cook. Cook says it is not time. Boy says he wants dinner. Cook says he shall not have it. This takes fifteen minutes.

Mother examines boy on his lessons. Boy does not know them; tries to peep. Mother reproves; makes boy

kneel; prepares to whip; whips. Mother weeps; boy catches flies on the floor; bites her finger.

Enter cook to see what the noise means. Cook takes boy to task. Boy stops his ears. Cook bawls. Cook kneels to lady; reproves her also; tells her she must keep her own temper, if she would train her boy.

Lady sulks, naturally. Boy slips behind and cuts her work out of her embroidery frame. Cook attacks boy. Cook sings a lament, and goes out to attend to dinner; but returns in frantic distress. During his absence everything has boiled over; everything has been burned to a crisp. Dinner is ruined. Cook now reconciles mother and son; drags son to his knees; makes him repeat words of supplication. While he does this cook turns his back to the audience, takes off his beard carefully, lays it on the floor, while he drinks a cupful of tea.

This is all, literally all. It took an hour and a half. The audience listened with intensest interest. The gesticulations, the expressions of face, the tones of the actors, all conveyed the idea of the deepest tragedy. Except for our interpreter, I should have taken the cook for a soothsayer, priest, a highwayman and murderer, alternately. I should have supposed that all the dangers, hopes, fears, delights possible in the lives of three human beings were going on on that stage. Now we saw how very far-fetched and preposterous had probably been our theories of the play we had seen before, we having constructed a most brilliant plot from our interpretation of the pantomime.

After this domestic drama came a fierce spectacular play, too absurd to be described, in which nations went to war because a king's monkey had been killed. And the kings and their armies marched in at one door and out at the other, sat on gilt thrones, fought with gilt swords, tumbled each other head over heels with as much vigor

and just as much art as small boys play the battle of Bunker Hill with the nursery chairs on a rainy day. But the dresses of these warlike monarchs were gorgeous and fantastic beyond description. Long, gay-colored robes, blazoned and blazing with gold and silver embroidery; small flags, two on each side, stuck in at their shoulders, and projecting behind; helmets, square breastplates of shining stones, and such decorations with feathers as pass belief. Several of them had behind each ear a long, slender bird-of-Paradise feather. These feathers reached out at least three feet behind, and curved and swayed with each step the man took. When three or four of these were on the stage together, marching and countermarching, wrestling, fighting, and tumbling, why these tail feathers did not break, did not become entangled with each other, no mortal can divine. Others had huge wings of silver filigree-work behind their ears. These also swayed and flapped at each step.

Sometimes there would be forty or fifty of these nondescript creatures on the stage at once, running, gesticulating, attacking, retreating, howling, bowing, bending, tripping each other up, stalking, strutting, and all the while cater-wauling, and all the time the drums beating, the gongs ringing, and the stringed instruments and the castanets and the fifes playing. It was dazzling as a gigantic kaleidoscope and deafening as a cotton-mill. After the plays came wonderful tumbling and somersaulting. To see such gymnastic feats performed by men in long damask night-gowns and with wide trousers is uncommonly droll. This is really the best thing at the Chinese Theatre,—the only thing, in fact, which is not incomprehensibly childish.

My last glimpse at the Chinese Empire was in Mr. Loomis's Sunday-school. I had curiosity to see the faces of the boys who had refused our invitation to the theatre.

As soon as I entered the room I was asked to take charge of a class. In vain I demurred and refused.

"You surely can hear them read a chapter in the New Testament."

It seemed inhuman as well as unchristian to refuse, for there were several classes without teachers, many good San Franciscans having gone into the country. There were the eager yellow faces watching for my reply. So I sat down in a pew with three Chinese young men on my right hand, two on my left, and four in the pew in front, all with English and Chinese Testaments in their hands. The lesson for the day was the fifteenth chapter of Matthew. They read slowly, but with greater accuracy of emphasis and pronunciation than I expected. Their patience and eagerness in trying to correct a mispronunciation were touching. At last came the end of the chapter.

"Now do you go on to the next chapter?" said I.

"No. Arx-play-in," said the brightest of the boys. "You arx-play-in what we rade to you."

I wished the floor of that Sunday-school chapel would open and swallow me up. To expound the fifteenth of Matthew at all; above all, to expound it in English which those poor souls could understand! In despair I glanced at the clock: it lacked thirty minutes of the end of school; at the other teachers: they were all glibly responding. Guiltily I said, "Very well. Begin and read the chapter over again, very slowly; and when you come to any word you do not understand, tell me, and I will try to explain it to you."

Their countenances fell. This was not the way they had usually been taught. But with the meekness of a down-trodden people they obeyed. It worked even better than I had hoped. Poor souls! they probably did not understand enough to select the words which perplexed them.

They trudged patiently through their verses again without question. But my Charybdis was near. The sixth verse came to the brightest boy. As he read, "Thus have ye made the commandment of God of none effect by your tradition," he paused after the word tradition. I trembled.

"Arx-play-in trardition," he said.

"What?" said I, feebly, to gain a second's more of time.

"What word did you say?"

"Trardition," he persisted. "What are trardition? Arx-play-in."

What I said I do not know. Probably I should not tell if I did. But I am very sure that never in all my life have I found myself, and never in all the rest of my life shall I find myself, in so utterly desperate a dilemma as I was then, with those patient, earnest, oblique eyes fixed on me, and the gentle Chinese voice reiterating, "What are trardition?"

MARIPOSA GROVE AND YOSEMITE VALLEY.

CHARLES LORING BRACE.

[Our sketches of travel in America will not be complete without descriptive narratives relating to its great natural wonders, of which the United States possesses more examples than any other country on the globe. The present selection, therefore, from Brace's "The New West, or California in 1867-68," is devoted to a brief account of the monster trees of that State and the scenic marvels of the Yosemite Valley.]

THE great pleasure of the American continent will hereafter be the journey to the Yosemite. There is no one object of nature in the world, except Niagara, to equal it in attraction. Whenever the Pacific road brings the two

coasts within a fortnight of each other, innumerable parties will be made up to visit it. I have been tolerably familiar, by foot-journeys, with Switzerland, Tyrol, and Norway, and I can truly say that no one scene in those grand regions can compare equally, in all its combinations, with the wonderful Cañon of the Yosemite. It is a matter of congratulation, also, to me, that I saw it before any road, or coach, or rail-car had approached it. It ought not to be visited otherwise than as our party journeyed to it,—on horses winding in picturesque train over velvety trails, beneath the gigantic pines of the Sierras. . . .

Among all my many travelling experiences in various countries, I do not think I can ever forget the romance and the delicious beauty of that first night's ride towards the Yosemite. The trail was barely wide enough for two to ride abreast, winding under majestic pines, over mountains, and down wide, deep dells, each step of the horses springing elastic from soft pine-leaves. The sun soon set, and a magnificent moon arose, giving us at one time a broad belt of light over the path, and then leaving us to descend into a mysterious gulf of darkness, and then casting strange shadows and half-lights through the pine-branches over our procession of riders. As we penetrated farther into the forest we began to wind about beneath trees such as few of us had ever seen,—the superb sugar-pine, perhaps the most perfect tree in nature, here starting with a diameter of from seven to twelve feet, and mounting up with most symmetrical branches to the height say of Trinity Church spire (two hundred and fifty to two hundred and sixty feet); on the end of its branches cones hanging a foot long. Sometimes we came forth from the forest for a few moments, and had grand glimpses of great mountain valleys, only partly revealed in the glorious moonlight. Most of the party were old travellers, and were rather impervious

to sensations, but we all agreed that this was a new one, and gave a most promising augury of the Yosemite excursion. After fourteen miles—an easy ride—we all reached Clark's Ranch at a late hour, ready for supper and bed.

[The next morning] we started at not too early an hour for a forest-ride to the Trees, Mr. Clark kindly guiding us. What may be called the avenue to these hoary monuments of antiquity lies through a gigantic forest of sugar-pines, themselves some two hundred to two hundred and fifty feet high; so that when you reach the mighty towers of vegetation you lose a little the sense of their vast height. I searched curiously as we rode through the forest for the conditions which should produce such monsters of growth. It must be remembered that the *Sequoia gigantea* is not found merely here, or at Calaveras and its neighborhood. There appears to be a belt of them running along the slope of the Sierras, about four thousand and five thousand feet above the sea-level, and as far south as Visalia. They are so plentiful near that place as to be sawed for lumber, though what so light a wood could be used for I can hardly think. In the neighborhood of the latter place the Indians report a tree, far in the forest, surpassing in grandeur anything ever seen; but thus far no white man has ever cast eyes on it. It is a mistake, too, to suppose the race wearing out. I saw, both here and in Calaveras, young giant *Sequoiæ*, beginning patiently their thousand years of growth with all the vigor of their grand ancestors; some of but four hundred years, mere youths, were growing splendidly. There are fewer young trees here than in Calaveras, because fire or some other cause has swept among the underbrush of all trees, and must have destroyed many of these burly saplings.

The *Sequoia* grows on mountain-slopes, where the slow wash of water, through ages, brings down minute particles

of fertilizing rocks, and the decayed vegetation of countless centuries, with the moisture of eternal springs, water and feed its roots. It enjoys a sun of the tropics without a cloud for six months, and has the balmy air of the Pacific, with incessant and gentle moisture, and a warm covering of snow for its winter. Beneath its roots, the ground never freezes. As has been well said, "It has nothing to do but grow;" and so with all the favorable conditions that nature can offer—air and sun and moisture—it pumps up its food from the everlasting hills, and builds up its slow, vegetable-like substance during century after century into a gigantic, symmetrical, and venerable pile, while nations begin and pass away beneath its shadow.

Think of lying under a tree beneath which the contemporary of Attila or Constantine might have rested, and which shall defy the storm, perhaps, when the present political divisions of the world are utterly passed away, and the names of Washington and Lincoln are among the heroes of a vague past.

But how to give an impression of its size! If my readers will imagine a Sequoia placed beside Trinity Church, he must conceive it filling up one of our largest dwelling-houses, say a diameter of thirty feet, with a circumference of ninety feet; the bark of this gigantic trunk will be light, porous, and reddish in color, with many scars upon it of fire (its great enemy); then, perhaps, at the height of the Trinity belfry (say one hundred feet), two opposing huge branches will protrude, it may be, themselves, of the size of large trees (say eight feet in diameter); these will be twisted and much broken; above them will come forth other heavy branches, which show the marks and blows of the storms of a thousand years or more, for the giant, so far above his fellows, meets a continual battering from the gales of the mountains.

There is no symmetry in his top, or delicacy and grace in his outline; he has battled and struggled with the storm for too many centuries to preserve an artistic appearance. He looks the giant of the forest, broad-rooted and strong-limbed, rough and weather-beaten, but defying snow and frost and hurricane for thousands of years, and still sheltering bird and beast and cattle beneath his grand shadow. . . .

We visited one big tree in Calaveras which had been blown over two years before. The enormous weight which each tree carries makes it more difficult to bear the gales, as it overtops the forest. Perhaps any ordinary wood, such as oak or maple, would increase the specific gravity, so that at three hundred feet high the leverage on the roots would be too great to bear any strain of a gale; but this wood is almost like cork,—lighter than any wood on the Eastern coast. The fall of this mighty tower, they say, was heard for miles around, and made the earth tremble. Where it fell it has buried its top deep in the ground, so that there is quite a ravine made by the blow in the earth. You strike the trunk where it is still a large tree, and then walk upon it some two hundred feet towards the roots. When you reach the roots you are upon a height equal to the roof of a moderate-sized house, and a fall from the trunk would be dangerous. You descend by a ladder.

If I recollect rightly, there were three hundred and sixty-five trees in this Mariposa Grove. I measured one trunk, broken off at the top, where it was a foot in diameter, which was about two hundred and ninety feet in length, and estimating thirty feet as the length of the part broken off, it must have been some three hundred and twenty feet high. We lunched near a "camp" of the Geological Survey, in the heart of the grove, lying on our backs beneath the gigantic canopies, and feeling like pigmies at the feet

of these giants. The younger trees were often wreathed with a strange, yellow, hanging moss. Our ladies were deeply interested in a remarkable flower which grew beneath the snow, a few patches of which still remained here in June. It was a blood-red flower of a fleshy-like substance, like the *Pyrola*, or "Dutchman's pipe," growing somewhat like a garden hyacinth. Its stems were clustered, from six to ten inches high, with long, erect scales, broader below and gradually narrower, and finally becoming bracts. The flowers were numerous, and occupied the upper half of the stem. It is the *Sarcodes sanguinea*.

[Leaving the Big Tree grove, the travellers made a farther ride of twenty-five miles through the Sierras to the Yosemite, the first view of which impressed them deeply.]

No aspect of nature I have ever looked upon, no sight of the desolate ocean, heaving and lashing in mighty surges beneath wintry storm, or sudden view of Alpine snow-peaks through rifts of black thunder-clouds, or glimpses of Norwegian coast-glaciers through the lulls of an Arctic gale, or even Niagara itself, was so full of the inspiration of awe as this first opening view of the Yosemite Cañon. All other scenes of grandeur and beauty must fade away in my memory when this vision is forgotten. Before the mighty powers which had shaped this tremendous gorge, and in presence of this scene of unspeakable and indescribable beauty and majesty, man and his works seemed to sink away to nothingness. . . . I almost felt as if I had known nothing of the cañon before, so surprising were the effects of coloring and shadow. It must be remembered we had struck the gorge on one of its lateral walls, say about four miles from its western end. There is no approach to it from below up the stream. As we lay on the edge of the cliff we gazed up a narrow green valley perfectly flat, from

a mile to half a mile wide, and winding, some six miles above, between enormous cliffs and precipices, a small, bright, sparkling stream in the middle, fringed with green grass or forest-trees. The wall, over the edge of which we were looking, was nearly three-quarters of a mile high, and far below, the oaks and willows and poplars and pines in the green intervale looked like little shrubs. On the other side, a short distance beyond, was the grand bluff of El Capitan, a sheer precipice of nearly four thousand feet, its light granite pile, in the evening light, the most majestic cliff that human eye has looked upon; beyond were other bluffs and precipices, pearly gray and purplish-white, with green fringes below, and dark archways or fantastic figures traced by shadows on their surface. There were buttresses, as of gigantic cathedrals, and archways such as might support hills of granite, and domes where a mountain was the substructure, and half domes, and peaks whose regular succession has given them the name of "Brothers,"—all varying in color and shadow, incessantly, with the receding light; some with the delicious cool gray of the rock color; some white, with a reddish shade; others faint purple; others resplendent in pink and brilliant purple; while over their edges, giving a joyous life to the scene, rushed sparkling silver streams, in innumerable waterfalls, dashing into the green valley below. . . . But the scene was changing. Over the valley, the heavy shadow of El Capitan continually increased its gigantic breadth of shade; beyond him the "Arches," which, to be seen at that distance, must be a thousand feet in height, grew each instant more strongly marked, but still farther beyond to the east the North Dome and the Half Dome were golden and purple in the evening light, and yet beyond the still white peaks of the Sierras towered above in the pale blue.

On our side of the vast gorge the foot of the various precipices and cliffs was covered with detritus, making, near the bottom, a considerable slope, on which grew many evergreen trees.

On the other side there was one line of massive rock, which fell apparently plumb, without a break or curve, for nearly four thousand feet, and at its base, so hard was the material, there seemed no recent detritus at all. One could evidently touch the very bottom of the immense fall of rock. . . .

The form of the cañon is unique, nothing in Europe resembling it: the immense vertical walls rising so abruptly from the green vale; the peaks, too, which surround it, being original, even in the Sierras; the immense, inaccessible, concentric masses of granite,—domes, or half-domes, as if melted in some gigantic mould, and then, when cooled, left standing in the air.

One of the grandest and most beautiful objects in the valley was directly opposite our hotel, and its music never ceased, day or night,—the Yosemite Fall. The stream which bears this name heads about ten miles away, and then flows down, almost directly over the mighty precipice, into the valley below,—a depth of two thousand five hundred and fifty feet. At this time it is about thirty-five feet wide by two or three deep. The fall has almost the appearance of one grand shoot of water, but it has, in reality, three divisions: the first is a descent of fifteen hundred feet on a ledge (as it seems), though it is, in fact, a shelf of rock, a third of a mile broad; then follow a series of cascades for six hundred and twenty-five feet, and a final leap of four hundred. There is water enough now to give a bright, foaming, grand sweep of the whole cataract. It is certainly one of the most beautiful objects the human eye can ever gaze upon! We never wearied of riding

out over the green meadows and gay, wild flowers to get some new aspect of it.

The only fall to compare it with, that I have ever seen, is the Vöring Foss, in Norway. This is a fall of nine hundred and fifty feet, but the water is so scanty that it is all resolved into wreaths of mist before it reaches the bottom; and it makes but little impression on the mind, compared with the Yosemite Fall. It is, moreover, confined in a narrow, dark gorge, and must be seen usually from above. In seeing the Californian fall, I did not even think of the Norwegian.

The amount of water, at this season, adds immensely to the cheerfulness and life of the valley; but it also occasioned us a great deal of trouble in getting round. We were mired several times, and twice one of our ladies was thrown on the soft greensward.

But the scampering gallops through the groves under these grand scenes, and the quiet amblings amid such beauty and sublimity, were pleasures which nothing marred. In our rides down the cañon, we were struck by the grand mass of the Sentinel Dome, four thousand one hundred and fifty feet above the valley, and said to give the finest point of view in the whole region round; the valley itself, it must be remembered, being over four thousand feet above the sea-level. Then three-quarters of a mile beyond is the majestic buttress of the Sentinel Rock, three thousand feet high, of which a thousand feet is a smooth obelisk; opposite to this are the Three Brothers, the highest three thousand eight hundred and thirty feet, and each regularly lower than the next.

Then comes the Cathedral Rock, two thousand six hundred and sixty feet, with two perfect spires, the most picturesque object in the valley; then the exquisite Pohono, or Bridal Veil, a flashing fall of a thousand feet swaying

like a silvery plume in the mountain breezes, and the grand feature of the gorge, of which I have so often spoken, El Capitan, three thousand six hundred feet.

To the east of the hotel, about two miles above the falls, the valley ends and divides into three cañons, each containing scenery as remarkable as those of the main gorge. The northwest cañon is the Tinaya Fork; here we have the Half Dome, a majestic inaccessible crest of concentric granite, four thousand seven hundred and thirty-seven feet above the valley, with a vertical face where the half sphere split off of two thousand feet in height; the North Dome, a rounded mass, three thousand five hundred and sixty-eight feet, and easy to ascend from the north. In this fork is the exquisite Tisayic Lake, on which the morning reflections are so beautifully given.

The middle cañon, that of the Merced River, is the most important one of the three. No ravine scenery in Europe equals this wild and extraordinary gorge. The river, which at this season has a tremendous body of water, descends through a wild ravine of two miles, nineteen hundred and eighty feet. The path winds along over a series of wild falls and rapids, till a cloud and gale of mist and wet cover it, through which we reach a dry place at the foot of a magnificent fall, four hundred and seventy-five feet high,—the Vernal. Then ladders are ascended up the face of the cliff, and we rest on the dry, sunny ledge over the boiling and whirling cataract. Still another scramble for a mile, and we find ourselves blinded, gasping, in the breath of the furious cataract above. We are all clad in India-rubber coats (furnished by a guide), and drip with water, and work up, inch by inch, stooping, as against a violent current. The gale takes away our breaths, and we have every now and then to catch a breath; there is nothing visible ahead but clouds of mist and driving swirls

of rain, with a roar filling the air, which prevents all voices from being heard. We are helping the ladies on with the utmost difficulty, but at last all reluctantly give out and turn back ; but I cannot bear to give up the view ; and after groping in the furious storm and mist, I at length find a side path through the chaparral, and soon reach a dry ledge beneath the superb Nevada Fall,—a majestic sweep of thundering water, six hundred and thirty-nine feet in height, more grand than any waterfall in the valley, because of the volume of water. There is a peculiar twist in the upper portion of it, which adds to its picturesque effect. On the other side rises a most remarkable peak of granite, solitary and inaccessible,—Mount Broderick, some two thousand feet. The scene as I stood there alone beneath this sublime sweep of waters, and amid those mighty mountain-cliffs, can never be forgotten.

The South Fork I did not visit, but the photographs show that it possesses scenery as romantic as the other branches of the cañon. It is interesting to notice that these enormous waterfalls in the Merced Cañon have scarcely an indentation on this most hard rock,—a fact probably indicating that they have not existed a great length of time. The comparative absence of detritus in the upper part of the main valley would seem to show the action of water and ice, pressing the débris into the lower portion where more of it is found. There are, too (as was discovered by Mr. King), something which may be called lateral moraines, and perhaps a terminal moraine in the middle of the cañon, so that it seems not improbable, though there is no absolute evidence, that in a comparatively recent period glaciers existed in the upper part, and a lake in the body of the Yosemite Cañon, the descent of the whole valley, it must be remembered, being only fifty feet during some eight miles.

A SPORTSMAN'S EXPERIENCE IN MEXICO.

SIR ROSE LAMBERT PRICE.

[Major Price, whose hunting adventures seem to have extended from Terra del Fuego to the northern boundary of the United States, gives us, in his "*Sport and Travel; or, The Two Americas*," a record full of incident and observation. From his greatly varied hunting experience we select a description of the pursuit of game in the vicinity of Acapulco, Mexico, which is of interest as showing the conditions of animal and vegetable life in that region.]

THE day after our arrival, H—— and myself, getting mules and a guide, started for Pira de la Questa, a small Indian village about twelve miles from Acapulco, and situated near the extremity of a large lagoon, some thirty miles in circumference, which we were informed was full of wild fowl. Over many a rough road and in many lands have I ridden, but never did I travel a highway like unto this. The path ran over the mountains through a thick forest, and more resembled the bed of a watercourse than an actually connected route. Nothing but mules, whose cat-like propensities enable them to overcome apparently insurmountable difficulties, could possibly have done the journey. In places the path was so narrow that two of these animals were unable to pass abreast, so that one would be obliged to go back into a convenient corner, or scramble up a bank, to permit the other to go by.

The forest was dense, but, as it was just prior to the rains, almost leafless, everything being burned and parched up except in the valleys and bottoms of ravines, where running water rendered the vegetation luxuriant and flourishing. This absence of foliage, though detracting consider-

ably from the beauty of the forest, permitted us to view all the better its feathered denizens, and in few tropical countries have I seen such lovely birds, or in such numbers as out here. To classify or name them would require a man to be a perambulating encyclopædia of natural history; but among them all I was most struck with the number of specimens of the woodpecker class, several of which were very beautiful. One in particular with a blood-red topknot, which glittered vividly in the sun, I envied much for my fishing-book, and regretted the guide had my gun in his possession nearly a mile behind.

As the sun was setting we entered the village, which consisted of a few mud huts with sideless roofs, and halting before one of them, was informed by the guide that it was to be our quarters for the night. It was simply a roof of palm-leaves over a mud floor, there being no kind of wall or even screen, and it formed the universal dormitory of men, women, and children, pigs and poultry, at the principal hotel—the Claridge's, in fact—of Pira la Questa. Leaving the proprietress and her numerous progeny engaged in hunting down an active-looking fowl for our evening repast, we rode to the lagoon, and giving the guide our mules to hold, shot a few of the curious-looking aquatic birds, which he pronounced to be “*buéno*,” or good for eating, that were feeding round the banks. It was rapidly getting dark, and seeing at a distance some birds that I took to be duck, I noiselessly crept down on them. To do so I had to pass over a small spot of white sand, concealed, until I was on it, by a clump of bushes.

While still silently watching the birds I saw something move a little to my right, and on turning round discovered a huge alligator, whom I had almost cut off from the lake. The bushes had hidden us until absolutely face to face, and he came by me with his teeth grinning and tail half cocked,

in the most unamiable frame of mind I ever saw in one of his tribe. Without intending it, I had very nearly cut him off from his native element; and though naturally a cowardly brute, feeling himself to a certain degree cornered, he had evidently made up his mind to fight. Not being prepared, with only small shot in my gun, for a duel with the reptile, I stopped short and gave him right of way, and, as he cleared me at about two yards, let him have both barrels behind the shoulder to expedite his movements, and had the satisfaction of seeing him give a jump into the water that would have done credit to a performer for the Grand National.

They are cowardly brutes, and though I have been frequently in parts of the world they inhabit, I have never yet heard of an instance of a man being attacked by one on land. In the water it is different. A boy had, while bathing, been taken down some months since close to this very spot, and from what I saw of the lagoon next morning, I would not have ventured a swim there for untold gold. Had I been a little quicker, and unintentionally barred this fellow's way to the lake, I am quite certain he would have attacked me, as he must have passed somehow. These creatures never take to the jungle, and, like a rat driven into a corner, he would have been obliged to fight.

On returning to the village we found our dinner nearly ready; bread and liquor we had brought with us, but the hunted fowl, new-laid eggs, and hot tortillas formed no bad meal for travellers sharp set by a mountain ride. After feeding, we visited some of the principal houses in the village, chaffed some of the good-humored and pretty little Indian girls, and arranged about a canoe for the following morning. We then slung our grass hammocks among the miscellaneous company and wooed the drowsy god of

slumber, our guide slinging his hammock up between us, and sleeping with his machete buckled around him, ready for attack or defence at a moment's notice.

The machete is the invariable companion of the poorer and middle classes of Mexicans, and the multiplicity of uses to which it is dedicated are something wonderful to the uninitiated. With it he clears the tangled paths in the forest; it helps to build his hut, to cut his firewood, and eat his dinner; he uses it for purposes of warfare, and too frequently also for purposes of assassination. The blade is broad, slightly curved, a little shorter than an infantry officer's regulation sword, and about twice as heavy. The handle is generally made of wood, the scabbard leather, and the edge invariably as keen as a razor. Occasionally the blades are ornamented with gold or silver, but the ordinary machete is perfectly plain.

Next morning we were up before daylight, and hastened to the banks of the lagoon, where according to agreement we should have found our canoe. None was forthcoming, however, and not until the sun broke fiercely on our heads and our patience was completely exhausted did our guide prevail on the man who was to have provided it to go in search of another. After a still further considerable delay, at last he arrived, but with a rickety conveyance that would only hold one gun besides the paddler; and H— taking the canoe, I walked along the edge, and our shooting commenced.

The place was full of all kinds of odd-looking waterfowl. Geese, duck, teal, pelicans, flamingo, and spoonbills were in hundreds, and many kinds of waders unknown to me; in fact, such an extraordinary variety of fresh-water birds I had never seen together before. The ducks were particularly handsome, having bright bronze breasts, which shone like burnished metal in the sun. Of teal I shot

several varieties, many of them with exceedingly beautiful and brilliant plumage; but I think among the queer ones I killed there were none more beautiful in plumage than the spoonbill; for though his singular and uncouth beak did not improve his countenance, he had the most lovely and delicate tinge of rose-color through his white feathers it is possible to conceive. We had him for dinner two days afterwards, and found him excellent.

Not knowing a quarter of the birds that got up, and many being fishy and unfit for food, whenever one rose the guide would cry either "Buéno" or "No buéno," as it happened to be fit or unfit for culinary purposes; and so on for nine miles along the banks, sometimes through mud, at others through sand, and at others through jungle or water, did I plod along, taking whatever was termed "buéno," and occasionally peppering an obtrusive alligator when he came anything inside twelve yards.

The heat was intense, and, to add to the discomfort of walking, the paths through the jungle and mangrove swamps occasionally bordered the edges of the lake, and were so thickly crossed by cobwebs that they were perpetually knocking off my hat, getting in my mouth and eyes, and at times almost impeded my progress. I never saw anything like them. Occasionally large forest-trees were entirely covered from top to bottom, and so thickly shrouded that not a leaf or twig could be seen through its unnatural-looking winding-sheet. The lagoon seemed full of fish, which were jumping in shoals all over it; but not once during the day did we see a single bird settle on its surface; and from the number of alligators swimming about, I think they showed their wisdom.

It was capital sport, but precious hard work also, and I was just about "played out," when we reached a "ranche," where, after a pull of cold water that must have somewhat

alarmed my constitution, I tumbled into a grass hammock, uncommonly glad to get out of the burning sun.

A pleasant-featured young Mexican woman, with a dark-eyed, good-looking sister, soon despatched between them one of the many chickens running about the house; and while the *cazuela* was preparing they very good-naturedly washed out my shirt, lending me, *ad interim*, some embroidered garment of their own. The rest of my clothes were hung up to dry, every stitch on me being thoroughly saturated. H—— and the canoe soon after arrived, and how we did enjoy the homely but excellent fare our hostess put before us! Then came pipes and a siesta, and a couple hours' rest saw us fit to return. H—— had got enough of it, and, borrowing a horse, rode back to the village. I returned in the canoe, and got a good many shots *en route*. Our bag was a mixed one, and consisted of the birds I have already mentioned, with several others whose names we did not know, and four rabbits. Wild duck and teal predominated, and the guides could hardly stagger from the canoe to the houses with our united bag.

The sun was fast setting as we left Pira la Questa on our return journey, and ere we reached the mountain-top it was quite dark. Unable to see a yard before us, but knowing we must go on, I threw the reins on my mule's neck, and, lighting a pipe, resigned myself implicitly to his sagacity, not only to find the path, but to avoid the obstacles which at every step lay before him. My confidence was not misplaced. With nose almost touching the ground, he seemed to smell his way along, and not once during our long ride did he deviate for a second from the proper track, or make a single false step or stumble. The sounds and strange cries during the dark stillness of the night were very remarkable. Whether caused by bird or insect I could not tell; but one in particular, resembling the pro-

longed whistle of a locomotive steam-engine, was frequently of more than a minute's duration without ceasing, and of such volume and intensity that unless I had been aware of the utter impossibility of a train being within hundreds of miles, I would have almost sworn to so familiar a sound. The lights of Acapulco at last came in sight, and our animals soon after deposited us safely, after a somewhat trying but very agreeable trip. . . .

On the 10th of May we left Acapulco and steamed quietly along the Mexican coast in sight of land until we reached Manzanilla Bay, on the southeast part of which are situated the few wretched huts that constitute the village. The harbor is well protected from southerly winds, but not from those directly from the westward. Behind the village, and only a few hundred yards from the sea-beach, is a large shallow lagoon which runs nearly forty miles into the interior, and at the end of the dry season becomes almost empty. The exhalations at this time rising from the mud and stagnant water are most dreadful, and even at our anchorage the stench during the night was almost unbearable. . . .

Next morning, before daylight, we started with Mr. D—— across the lagoon to a place about an hour's row from the village, where he said he was in the habit of getting wild duck. The lake was so shallow that our boat often grounded, and the oars at each stroke disturbed the black, ink-like mud that constituted the bottom. The sides were beautifully wooded, and surrounded by ranges of hills extending far into the interior, the edges of the water being fringed with a belt of mangrove-trees, whose peculiarly bright green foliage contrasted pleasingly with the sombre coloring of the leafless trees behind them. The perfectly stagnant water was of a light-yellow tint, and as full of alligators as it could well be. . . .

After firing a good many shots, and gathering a somewhat miscellaneous bag, Mr. D—— saw a large alligator asleep on some mud, lying half in and half out of the water; and as I was the only one of the party who had brought any bullets, he sent one of the guides to show me where it lay, in hope that I might get a shot.

Slowly, and with the greatest caution, I waded through water until I got within twelve yards of where the brute lay, and aiming about an inch behind the eye, drove a bullet clean into his brain. He gave a convulsive kind of shudder and lash with his tail, and was, I believe, dead; but to make certain I gave him the second barrel at about four yards' distance behind the shoulder, and then felt quite confident that I had indeed "wound him up."

It was some time before we could induce the natives to assist in pulling him on dry land. Though they do not mind them living and swimming about, they are particularly careful of a wounded one, a single sweep of its powerful tail, even when mortally stricken, being known to break both legs of a man like a pipe-stem. Though dead enough to all intents and purposes, an alligator, like either a shark or a turtle, will continue possessed of a certain amount of vitality and motion for a long period after life is really extinct. This fellow was still gently swaying his tail about while we bent on a rope to it, and, all five of us clapping on, soon hauled him to the dry mud on the bank, where we took his length, opened his jaws, and generally examined the formidable-looking reptile at our leisure. He was about fifteen feet long and inconceivably hideous. The first bullet had smashed a large hole exactly where I aimed, —namely, about one inch behind the eye; the skull seemed comparatively thin there, was unprotected by any thick skin, and a large lump of his brain was oozing through the wound. The second bullet went through his heart; but I

am convinced that it was unnecessary, as the first shot had done all that was needful.

Much as the people have written to the contrary, I am quite satisfied now that an alligator is as easily slain as a rabbit, if only hit in the right place; and that place is not in the eye, as is generally stated, but on the same level, and from an inch to an inch and a half behind it. The brain in all reptiles lies rather far back in the head, joining almost to the neck. By striking one in the eye from many positions it is quite possible that the brain may not be touched at all; while, if the ball hits the slightest degree in front of it, on the creature's long ugly snout, the bullet might as well be chucked in the river for all the harm it will do the alligator. Unsightly as these gentry are, the Indians occasionally eat them. The skins are sometimes tanned; but they smell so strong, it is an awkward job to handle them. During dry seasons they collect in vast quantities in the small pools still left unevaporated, and are then killed in large numbers for their hides, which when tanned are found serviceable for many purposes. They are tougher than ordinary leather, and resist water better. Only the belly pieces are used.

Some few years ago during a very heavy rain, a number of alligators got taken out of the lake by a small river running into the sea, which was greatly flooded. They were immediately attacked by the sharks, and a strange battle ensued between these equally voracious monsters, which all the people of the village flocked out to witness. The battle lasted all day, and the noise of the combat could be heard half a mile off. John Shark was, however, more at home in his native element than his scaly antagonist, and eventually the alligators were all eaten up or killed.

THE SCENERY OF THE MEXICAN LOWLANDS.

FELIX L. OSWALD.

[Mexico is made up of two distinctively different regions; one, the central plateau, temperate in climate, and marked by a great dearth of rainfall; the other, the lowland areas between the plateau and the bordering oceans, tropical in climate and productions, and luxuriant from abundant rains. Dr. Oswald, in the following selection, leads us through the Valley of Oaxaca, a section of this Tierra Caliente, or warm country, and makes us familiar with its interesting vegetable and animal productions and its scenic features.]

WE had a glimpse of the sun before we finished our short breakfast, and when we plunged into the maze of the forest the occasional vistas through the leafy vault revealed larger and larger patches of bright blue sky. Our so-called road, however, was worse than anything I had ever seen or heard of Flemish or South Louisiana synonymes of that word,—miry lagoons and spongy mud as black and as sticky as pitch. I followed at the heels of my carrier, who preferred the lagoons and seemed to find the shallow places by a sort of instinct, and the Switzer managed to propel his heavy boots through the toughest quagmire; but his boy, after losing his shoes five or six times, slung them across his shoulder and splashed on barefoot. We kept through a comparatively open forest of cottonwood- and tulip-trees, with a dense jungle on our right-hand side, while on our left the land sloped towards the bottom of the Rio Verde, which is here about five hundred paces wide, and during the rainy season fills its muddy banks to the brink. These lower coast forests abound in gigantic trees, whose fruits are only accessible to the winged and four-handed denizens of the forest, but farther up the river-

shores are lined for miles with a dense growth of wild-growing plantains, of which the natives distinguish four varieties under as many different names. The fruit of the largest, the *cuernavacas* ("cow-horns"), attains a weight of seven pounds, and resembles in shape the crooked pod of the tamarind rather than the cucumber-shaped little bananas which reach our Northern markets. They ripen very slowly, and often rot on the tree before they become eatable, but the Mexicans cure them over a slow fire of embers and green brushwood, after which their taste can hardly be distinguished from that of the finest yellow bananas. Palm-trees mingle here with the massive stems of the cottonwoods, talipot-palms, and the *Palma prieta*, whose nut might become a profitable article of export, having a close resemblance to a filbert. The plum-clusters of the mango can only be reached by a bold climber, as the trunk rises like a mast, often perfectly free from branches for eighty or ninety feet, and the chief beneficiaries of this region are still the macaws and squirrel-monkeys; but farther up Pomona becomes more condescending, and the ancient Gymnosophists, whose religion restricted true believers to a diet of wild-growing tree-fruits, would have found their fittest home in the terrace-land between the lower twenty miles of the Rio Verde and the foot-hills of the Sierra de San Miguel.

Plum-bearing bushes abound from June to September with red, yellow, and wax-colored fruit; the *morus*, or wild mulberry-tree, literally covers the ground with its dark, honey-sweet berries; the crown of the pino-palm is loaded with grape-like clusters, which, struck by a cudgel, discharge a shower of rich acorn-shaped nuts; guavas, alligator-pears, mamayos, chirimoyas, and wild oranges display flowers and fruit at the same time, and under the alternate influence of heat and moisture produce their

perennial crops with unfailing regularity; the algarobe (*Mimosa siliqua*), a species of mezquite not larger than an apple-tree, yields half a ton of the edible pods known as carob-beans or St. John's bread; the figs of the gigantic banyan-tree furnish an aromatic syrup; the trunks of the *Robinia viridis* exude an edible gum; and from the vine-tangle forming the vault of the forest hang the bunches and clusters of forty or fifty varieties of wild grapes, many of them superior to our scuppernongs and catawbas, while the amber-colored *Uva real* rivals the flavor of the finest Damascene raisin-grapes. A forced march of ten hours through fens and silent virgin woods brought us at last to the hummock region; the plain swelled into mounds, and the currents of the sluggish bayous became more perceptible. The higher levels showed vestiges of cultivation; we crossed dykes and ditches, a neglected fence here and there, and where the larger trees had been felled grapes and liana figs covered even the bushes and hedges in incredible profusion. A troop of capuchin monkeys leaped from a low mango-tree, and two stumbling youngsters who brought up the rear in the scramble for the high timber would have tempted us to a chase if we had not been anxious to reach less malarious quarters before night. The neighborhood of the great swamps still betrayed itself by that peculiar miasmatic odor which emanates from stagnant pools and decaying vegetable matter, and in the recesses of the forest fluttered the slate-colored swamp-moth, the ominous harbinger of the mosquito. The tipulary pests were getting ready for action; their skirmishers, the *sancudos* and *moscas negras*, had already opened the campaign, and became sensible as well as audible in spite of the rapidity of our march. One of the twilight species, the *Mosca delgada*, a straw-colored little midge, bites like a fire-ant,—a mischievous and, it seems, unpractical freak

of nature, since the superfluous virulence of its sting must certainly interfere with the business facilities of a suctorial insect.

[As evening descended the travellers reached a cotton plantation, and hastened to take refuge from the rising cloud of mosquitoes.]

The cotton-gin loomed at the farther end of the field, and was taken by storm over piles of muck and scattered fence-rails. Seeing no ladder, we clambered through the pivot-hole in the ceiling of a musty-smelling machine-shed, but in the open loft above we found a delicious breeze, and—St. Hubert be praised!—not a single mosquito.

The carrier threw himself upon his pack with a sigh of relief, and we squatted around the hatch to cool off before we opened our mess-bag.

From the hills on our right came the perfume of blooming tamarisks, and from the jungle below a cool lake-air; and at times strange voices of the wilderness,—the hoarse bark of a cayman, answered by the shriek of swamp-geese in the canebrakes of the Rio Verde, and in the distance now and then a queer rustling sound, like the shaking of a tree butted by some heavy animal. Bats were circling above our heads in the moonlight, and our advent seemed to have excited the curiosity of a troop of flying-squirrels, who uttered their chirping squeak now on the roof, now in the branches of a neighboring live-oak-tree.

After removing a layer of seed-cotton that might harbor scorpions or centipedes, I spread my blanket near the hatch and made myself comfortable for the night. My feet still smarted, though I had pulled off my stockings as well as my boots; yet I could not regret the hardships of a march which had brought us to such an encampment. The portador was taking his ease in the centre of the floor, where the night-wind played with his long hair, while the

Swiss boy had fallen asleep on the mantle of his countryman, who was sitting in the open *louvre*, smoking his pipe in measureless content. The air up here was delightfully cool, and, with the buzz of the legions of Beelzebub still ringing in our ears, the sense of security itself was more than a negative comfort.

Baron Savarin, who wrote a treatise on the art of enjoying life, should have added a chapter on the happiness of contrast. A snug little cottage in a stormy November night, a shade-tree on the *Llano Estacado*, the silence of the Upper Alleghanies after a "revival-meeting" in the valleys, a bath in the dog-days, would rank above all the luxuries of Paris and *Stamboul*, if unbought enjoyments could ever become fashionable.

The moon set soon after midnight, but we managed to readjust our luggage by the light of greased paper spills, and entered the gates of the foot-hills before the watch-call of the night-hawk had been silenced by the reveille of the iris-crows. A keen land-breeze, tumbling the mists through the fens of the *Tierra Caliente*, gave promise of a bright day. What wonderful perfumes the morning wind brews from the atmosphere of a moist tropical forest-land!—scents that haunt the memory more persistently than the echo of a weird song. No latter-day nose could analyze these odors and trace them to their several sources; but with or without an attempt at further classification, they might be primarily divided into sweet and pungent aromatic smells, the latter prevailing in the coast jungles, the former in the mountain forests. A few of the first named—the spicy scents—are so peculiar that, once identified, they can be easily recognized: here, for instance, the effluvium of the musk lianas, whose flowers diffuse a sort of odorous diapason which predominates, even through the bouquet-medley of the South Mexican flora.

As the white streaks in the east assumed a yellowish tint, the paroquets in the crests of the pino-palms saluted the morning with sudden screams; the multitudinous voices of a crow-swarm approached from the coast forests; two and two, and in a series of pairs, the macaws came flying across the sky; and in our near neighborhood the startling cry of the *chachalaca* or jungle-pheasant went up from an hibiscus thicket. Softly first, then louder and louder, the *calanda*, the mocking-bird of the tropics, intonated its morning hymn, and the fluting curlew rose from the grass like a skylark; but a sweeter sound to our ears was the murmuring of a little brook at the roadside. We had reached the region of rocks and swift-flowing waters.

Of reptiles, as of Red Republicans, it may be said that they are least dreaded in the countries where they most abound. While a New England boarding-school virgin goes into epileptic spasms at the aspect of a blindworm, the young Mexicanas surround themselves with a variety of ophidian pets, and view a freckled tree-snake and a gay butterfly with equal pleasure or equal unconcern. A little barefoot girl that met us on her way to the spring put her toes caressingly on the smooth hide of a green-and-white speckled *Vivora mansa* that wriggled across the road; and our barelegged portador kicked dozens of good-sized bush-snakes out of our path after noticing that they frightened our young travelling companion. More than ninety per cent. of all South American snakes are as harmless as lizards, and the four or five venomous varieties are well known and easily avoided.

I will here add a word on the dreaded venomous insects of the tropics. The ant and mosquito plagues of the coast jungles can hardly be over-estimated, but the virulence of their larger congeners is frequently and grossly exaggerated. The chief insect-ogres of sensation romancers and

fireside travellers are three: the scorpion, the tarantula, and the centipede, either of whom can rival the homicidal prestige of Victor Hugo's octopus. But I may confidently appeal to the verdict of any personal observer who has passed a few years in the African or American tropics when I assert that these supposed express-messengers of Death are not more venomous and are far less aggressive than our common North American hornet. I doubt if the sting of twenty tarantulas could cause the death of a healthy child, and I am quite sure that a poison-ivy blister and the bite of a fire-ant are more painful than the sting of a centipede. An hysterical lady may succumb to the bite of a common gadfly, but I hold that only co-operative insects—termites, wasps, humble-bees, etc.—could ever make away with a normally constituted human being.

A swarm of vociferous iris-crows appeared in the sky overhead, and before they had passed, the woods were wide awake all around. The humming-birds were on the wing, the wood-pigeons repeated their murmuring call in the taxus-groves, and from the lower depths of the forest came the chattering scream of a squirrel-monkey. The rising sun was hidden by the tree-tops of the eastern valleys when we halted on the summit of a rocky bluff, but the mountain mists had disappeared, and the vistas on our left afforded a dazzling view of the sunlit foot-hills and the valley of the Rio Verde. The river is here crossed by a rope-ferry a little above its junction with a tributary that drains the glorious valley of Morillo and an Alpine group whose wooded heights stands in my memory like a vision of a Ganadesha, the mountain park of Indra's Paradise.

The air of these woodlands is the antithesis of our Northern workshop atmosphere. There is a feeling of delight—our lost sixth sense, I am tempted to call it—which gratifies the lungs rather than the olfactory organ

if you inhale the morning breezes, oxidated, and perhaps ozonized, by the first influence of sunlight on the aromatic vegetation of these hills,—a delight which, like the charm of harmonious sounds, reacts on the soul and awakens emotions which have lain dormant in the human breast since we exchanged the air of our Summer-land home for the dust of our hyperborean tenement-prisons.

The hum of insects soon mingled with the bird-voices of our forest. To and fro, in fitful flight, flashed the *libellas*, the glitter-winged dragon-flies, and a few large papilios flopped lazily through the dew-drenched foliage. No gnats up here, but thousands of tiny, honey-seeking wasps and midges, and bright-winged grasshoppers that rose with a fluttering spring when the first sunbeams reached the damp underbrush. Ants hurried about their daily toil, and when we ascended the next ridge we saw various kinds of lizards flitting across the road or basking on the wayside rocks, one of them a sort of dwarf iguana of a moss-green tint, on which protective color it seemed to rely for its safety, as its movements were as sluggish as those of a toad.

As we kept steadily up-hill, the sun seemed to mount very rapidly, and, peak after peak, the summits of the upper Sierra rose into view. Zempantepec, La Sirena, and the Nevada de Colcoyan towered above the rest, the latter at least four thousand feet above the snow-line. Few prospects on earth could efface the impression of that panorama. In the Sierra de San Miguel our continent reproduces the Syrian Lebanon on a grander scale. Septimus Severus, who vacillated between his throne and the Elysian valleys of Daphne, would have renounced the empire of the world for the mountain-gardens of the Val de Morillo, and the giants of the cypress forests on the southeastern slope of the Sierra dwarf all the cedars of Bashan and Hebron.

The largest, though not the tallest, of these trees, the cypress of Maria del Tule (twelve miles south of San Miguel), which Humboldt calls the "oldest vegetable monument of our globe," has a diameter of forty-two feet, a circumference of one hundred and thirty-six feet near the ground and of one hundred and four feet higher up, and measures two hundred and eighty-two feet between the extremities of two opposite branches. Yet this tree has many rivals in the Val de Morillo and near the sources of the Rio Verde, where groups of grayish-green mountain-firs rise like hillocks above the surrounding vegetation.

On our right extended the orange-gardens of Casa Blanca for two miles along the base of the hill to a deep ravine, reappearing on the other side, where their white-blooming tree-tops mingled with the copses of a banana-plantation. Farther up, euphorbias and hibiscus prevailed, and the upper limit of the foot-hills is marked by the paler green of the cork-oak forests that cover the slopes of the sierra proper. In the northeast this sierra becomes linked with the ramifications of the central Cordilleras, and connected with our ridge by one of the densely-wooded spurs that flank the plateau of the Llanos Ventosos. The rocks at our feet belonged, therefore, to a mountain-chain that might be called a lineal continuation of the Gila range in Arizona and Nueva Leon. But what a difference in the climate and scenery! There arid rocks and thorny ravines; here dense mountain forests, deep rivers, a saturated atmosphere, and springs on almost every acre of ground. The very brambles in the rock-clefts were fresh with dew, and the sprouts of the broom-furze looked like wildering asparagus. The ravines flamed with flowers of every size and every hue. An agent of a London or Hamburg curiosity-dealer might make his living here with a common butterfly-net. On any sunny forenoon an active boy could

gather a stock of *Lepidoptera* that would create a bonanza sensation among the collectors of a North European capital. The rhododendron thickets of the upper Rio Verde are frequented by gigantic varieties of *nymphalis*, *vanessa*, and *parnassius*, which would retail in Brussels at from two to ten dollars apiece.

The sun rose higher, but not the thermometer, and when we clambered up through an orchard of scattered cherry-trees I am sure that the maximum temperature in the shade did not exceed sixty-five degrees Fahrenheit. We had reached the Llanos Ventosos, the air-plains of San Miguel, the playground of the four winds of heaven, where sun-strokes are unknown, though the mists of the rainy season never cloud their deep-blue sky. Down in the coast jungles the Rain-fiend was at it again: dark-gray showers swept visibly along the shore, while the foot-hills simmered under the rays of a vertical sun. But up here the air was dry as well as cool; the edge of the plateau is at least six thousand feet above the level of the Pacific, which is in plain view from Punta Piedra to the downs of Tehuantepec.

We entered the village about two P.M., and my companions conducted me to a little frame house, where I was hospitably received by the Indian gardener and the daughters of Pastor Wenck, the minister of the Protestant part of the community, whose brother in Tehuantepec had intrusted me with different letters, with a note of introduction. The pastor had harnessed his mule an hour ago to get a load of Spanish moss from the foot-hills, so I left my carrier in charge of the Indian gardener and sauntered out into the village.

Neubern (New Bern) de San Miguel—or Villa Cresciente, as it was originally called, from its situation on a crescent-shaped bluff—was founded in 1865 under the

happiest auspices, the charter of the colony including such inducements as exemption from taxes for the first five years, free roads and schools, gratuitous seed-corn, farming implements, etc., to indigent immigrants, and attracted a considerable number of the very best agriculturists from Tyrol and Southern Switzerland. But after the collapse of the imperial government a waning moon would have been the fitter emblem of the Crescent Village: its privileges were abrogated, and many of the disappointed Bauern returned to their native countries. Still, the appointment of a few half-Indian officials is the only positive grievance of the colonists, and the advantages of their climate and situation might well reconcile them to greater inconveniences.

At a distance of only sixteen degrees from the equator, the average temperatures of the coldest and warmest months differ less than spring and summer in the United States, so that the September weather of Geneva or Innspruck is here as perennial as a sea-fog in Newfoundland. During a residence of seven years, Pastor Wenck has chronicled four thunder-storms, twenty-two common storms, two hoar-frosts (both in November), one sultry day, and two hundred and eight short showers, leaving a balance of two thousand two hundred and ninety-two days of *him-melswetter*,—heaven weather,—as he called it, alternating with cool nights whose dew indemnifies the fields for the scantiness of the annual rainfall. Yet the denizens of this Himmel-land come in for a first-hand share of all the luxuries which a compensating nature has lavished on the inhabitants of the sweltering Tierra Caliente.

Forty or fifty varieties of tropical fruits come to their tables in a freshness and sun-ripened sweetness quite unknown to our Northern markets; their builders may select their material from groves of mahogany, iron-wood,

American ebony, green-heart, euphorbia, and other timber-trees of the coast swamps; cacao, vanilla, gums, and frankincense can be bought at half trade prices, and an excursion of ten miles will take them to a region where the pot-hunter can fill his bag day after day without fear of ever exhausting the meat-supply, where the adventurous sportsman may try his luck and the mettle of his dogs, and where the naturalist can revel in all the wonders of a tropical terra incognita.

AMONG THE RUINS OF YUCATAN.

JOHN L. STEPHENS.

[The Egypt of America, as one may fairly call the Maya region of Yucatan, was first brought prominently into notice by John L. Stephens, who did yeoman service in exploring the massive monuments of a past civilization there scattered, and in describing and picturing their remarkable details. Since his period many travellers have visited and studied these vast remains and described them in abundant detail. But Stephens visited that region as a discoverer, and from his works we select a description of the difficulties under which he labored in his interesting work of exploration at Copan. He had taken quarters in a hut near the ruins, and returned to his former quarters for his luggage. The homeward journey was accomplished under stress of opposing circumstances.]

IN the mean time it began to rain; and, settling my accounts with the señora, thanking her for her kindness, leaving an order to have some bread baked for the next day, and taking with me an umbrella and a blue bag, contents unknown, belonging to Mr. Catherwood, which he had particularly requested me to bring, I set out on my return. Augustin followed, with a tin teapot and some other articles for immediate use. Entering the woods, the

umbrella struck against the branches of the trees and frightened the mule; and, while I was endeavoring to close it, she fairly ran away with me. Having only a halter, I could not hold her, and, knocking me against the branches, she ran through the woods, splashed into the river, missing the fording-place, and never stopped till she was breast-deep. The river was swollen and angry, and the rain pouring down. Rapids were forming a short distance below. In the effort to restrain her I lost Mr. Catherwood's blue bag, caught at it with the handle of the umbrella, and would have saved it if the beast had stood still; but as it floated under her nose she snorted and started back. I broke the umbrella in driving her across, and, just as I touched the shore, saw the bag floating towards the rapids, and Augustin, with his clothes in one hand and the teapot in the other, both above his head, steering down the river after it. Supposing it to contain some indispensable drawing-materials, I dashed among the thickets on the bank, in the hope of intercepting it, but became entangled among branches and vines.

I dismounted and tied my mule, and was two or three minutes working my way to the river, where I saw Augustin's clothes and the teapot, but nothing of him, and, with the rapids roaring below, had horrible apprehensions. It was impossible to continue along the bank; so, with a violent effort, I jumped across a rapid channel to a ragged island of sand covered with scrub-bushes, and, running down to the end of it, saw the whole face of the river and the rapids, but nothing of Augustin. I shouted with all my strength, and, to my inexpressible relief, heard an answer, but, in the noise of the rapids, very faint; presently he appeared in the water, working himself round a point and hauling upon the bushes. Relieved about him, I now found myself in a quandary. The jump back was to

higher ground, the stream a torrent, and, the excitement over, I was afraid to attempt it. It would have been exceedingly inconvenient for me if Augustin had been drowned. Making his way through the bushes and down to the bank opposite with his dripping body, he stretched a pole across the stream, by springing upon which I touched the edge of the opposite bank, slipped, but hauled myself up by the bushes with the aid of a lift from Augustin.

All this time it was raining very hard, and now I had forgotten where I tied my mule. We were several minutes looking for her, and, wishing everything but good luck to the old bag, I mounted. Augustin, principally because he could carry them more conveniently on his back, put on his clothes.

[Reaching a village, he took shelter till the rain abated, but it began worse than ever after he again took to the road.]

I rode on some distance, and again lost my way. It was necessary to enter the woods on the right. I had come out by a foot-path which I had not noticed particularly. There were cattle-paths in every direction, and within the line of a mile I kept going in and out, without hitting the right one. Several times I saw the print of Augustin's feet, but soon lost them in puddles of water, and they only confused me more; at length I came to a complete standstill. It was nearly dark; I did not know which way to turn; and as Mr. Henry Pelham did when in danger of drowning in one of the gutters of Paris, I stood still and halloed. To my great joy, I was answered by a roar from Augustin, who had been lost longer than I, and was even in greater tribulation. He had the teapot in his hand, the stump of an unlighted cigar in his mouth, was plastered with mud from his head to his heels, and altogether a most distressful object.

We compared notes, and, selecting a path, shouting as we went, our united voices were answered by barking dogs and Mr. Catherwood, who, alarmed at our absence, and apprehending what had happened, was coming out with Don Miguel to look for us. I had no change of clothes, and therefore stripped and rolled myself in a blanket, in the style of a North American Indian. All the evening peals of thunder crashed over our heads, lightning illuminated the dark forest and flashed through the open hut, the rain fell in torrents, and Don Miguel said that there was a prospect of being cut off for several days from all communication with the opposite side of the river and from our luggage. Nevertheless, we passed the evening with great satisfaction, smoking cigars of Copan tobacco, the most famed in Central America, of Don Miguel's own growing and his wife's own making. . . .

At daylight the clouds still hung over the forest; as the sun rose they cleared away; our workmen made their appearance, and at nine o'clock we left the hut. The branches of the trees were dripping wet, and the ground was very muddy. Trudging once more over the district which contained the principal monuments, we were startled by the immensity of the work before us, and very soon concluded that to explore the whole extent would be impossible. Our guides knew only of this district; but having seen columns beyond the village, a league distant, we had reason to believe that others were strewed in different directions, completely buried in the woods and entirely unknown. The woods were so dense that it was almost hopeless to think of penetrating them. The only way to make a thorough exploration would be to cut down the whole forest and burn the trees. This was incompatible with our immediate purposes, might be considered taking liberties, and could only be done in the dry season.

After deliberation we resolved first to obtain drawings of the sculptured columns. Even in this there was great difficulty. The designs were very complicated, and so different from anything Mr. Catherwood had ever seen before as to be perfectly unintelligible. The cutting was in very high relief, and required a strong body of light to bring up the figures, and the foliage was so thick and the shade so deep that drawing was impossible.

After much consultation we selected one of the "idols," and determined to cut down the trees around it, and thus lay it open to the rays of the sun. Here again was difficulty. There was no axe, and the only instrument which the Indians possessed was the machete, or chopping-knife, which varies in form in different sections of the country. Wielded with one hand, it was useful in clearing away shrubs and branches, but almost harmless upon large trees; and the Indians, as in the days when the Spaniards discovered them, applied to work without ardor, carried it on with little activity, and, like children, were easily diverted from it. One hacked into a tree, and when tired, which happened very soon, sat down to rest, and another relieved him. While one worked there were always several looking on. I remembered the ring of the woodman's axe in the forest at home, and wished for a few long-sided Green Mountain boys.

But we had been buffeted into patience, and watched the Indians while they hacked with their machetes, and even wondered that they succeeded so well. At length the trees were felled and dragged aside, a space cleared around the base, Mr. C.'s frame set up, and he set to work. I took two Mestitzoes, Bruno and Francisco, and, offering them a reward for every new discovery, with a compass in my hand set out on a tour of exploration. Neither had seen "the idols" until the morning of our first visit, when they

followed in our train to laugh at los Ingleses; but very soon they exhibited such an interest that I hired them. Bruno attracted my attention by his admiration, as I supposed, of my person; but I found it was of my coat, which was a long shooting-frock, with many pockets, and he said that he could make one just like it except the skirts. He was a tailor by profession, and in the intervals of a great job upon a roundabout jacket worked with his machete. But he had an inborn taste for the arts. As we passed through the woods nothing escaped his eye, and he was professionally curious touching the costumes of the sculptured figures. I was struck with the first development of their antiquarian taste. Francisco found the feet and legs of a statue, and Bruno a part of the body to match, and the effect was electric upon both. They searched and raked up the ground with their machetes till they found the shoulders, and set it up entire except the head; and they were both eager for the possession of instruments with which to dig and find this remaining fragment.

It is impossible to describe the interest with which I explored these ruins. The ground was entirely new; there were no guide-books or guides; the whole was a virgin soil. We could not see ten yards before us, and never knew what we should stumble upon next. At one time we stopped to cut away branches and vines which concealed the face of a monument, and then to dig round and bring to light a fragment, a sculptured corner of which protruded from the earth. I leaned over with breathless anxiety while the Indians worked, and an eye, an ear, a foot, or a hand was disentombed; and when the machete rang against the chiselled stone, I pushed the Indians away and cleared out the loose earth with my hands. The beauty of the sculpture, the solemn stillness of the woods, disturbed only by the scrambling of monkeys and the chat-

tering of parrots, the desolation of the city, and the mystery that hung over it, all created an interest higher, if possible, than I had ever felt among the ruins of the Old World. After several hours' absence I returned to Mr. Catherwood, and reported upward of fifty objects to be copied.

I found him not so well pleased as I expected with my report. He was standing with his feet in the mud, and was drawing with his gloves on, to protect his hands from the mosquitoes. As we feared, the designs were so intricate and complicated, the subjects so entirely new and unintelligible, that he had great difficulty in drawing. He had made several attempts, both with the camera lucida and without, but failed to satisfy himself or even me, who was less severe in criticism. The "idol" seemed to defy his art; two monkeys on a tree on one side appeared to be laughing at him, and I felt discouraged and despondent. In fact, I made up my mind, with a pang of regret, that we must abandon the idea of carrying away any materials for antiquarian speculation, and must be content with having seen them ourselves. Of that satisfaction nothing could deprive us. We returned to the hut with our interest undiminished, but sadly out of heart as to the result of our labors.

[Meanwhile, the blue bag which had caused so much trouble was recovered, under the incitement of a dollar reward. It was found to contain a pair of old, but water-proof, boots, whose recovery cheered Mr. Catherwood's heart, enabling him the next day to defy the wet mud.]

That day Mr. Catherwood was much more successful in his drawings; indeed, at the beginning the light fell exactly as he wished, and he mastered the difficulty. His preparations, too, were much more comfortable, as he had his water-proofs, and stood on a piece of oiled canvas used for covering luggage on the road. I passed the morning in

selecting another monument, clearing away the trees, and preparing it for him to copy. At one o'clock Augustin came to call us to dinner. Don Miguel had a patch of beans, from which Augustin gathered as many as he pleased, and, with the fruits of a standing order for all the eggs in the village, being three or four a day, strings of beef, and bread and milk from the hacienda, we did very well. In the afternoon we were again called off by Augustin, with the message that the alcalde had come to pay us a visit. As it was growing late, we broke up for the day, and went back to the hut. We shook hands with the alcalde, and gave him and his attendants cigars, and were disposed to be sociable; but the dignitary was so tipsy he could hardly speak. His attendants sat crouching on the ground, swinging themselves on their knee-joints, and, though the positions were different, reminding us of the Arabs. In a few minutes the alcalde started up suddenly, made a staggering bow, and left us.

[Yet trouble was brewing for them. They had made an enemy of the great man of the district, and he stirred up the people to hostility. The annoyance grew so great that Stephens found it necessary to take some steps to restore amity.]

Mr. Catherwood went to the ruins to continue his drawings, and I to the village, taking Augustin with me to fire the Balize guns, and buy up eatables for a little more than they were worth. My first visit was to Don Jose Maria. After clearing up our character, I broached the subject of a purchase of the ruins; told him that, on account of my public business, I could not remain as long as I desired, but wished to return with spades, pickaxes, ladders, crow-bars, and men, build a hut to live in, and make a thorough exploration; that I could not incur the expense at the risk of being refused permission to do so; and, in short, in

plain English, asked him, "What will you take for the ruins?" I think he was not more surprised than if I had asked him to buy his poor old wife, our rheumatic patient, to practise medicine upon. He seemed to doubt which of us was out of his senses. The property was so utterly worthless that my wanting to buy it seemed very suspicious. On examining the paper, I found that he did not own the fee, but held under a lease from Don Bernardo de Aguila, of which three years were unexpired. The tract consisted of about six thousand acres, for which he paid eighty dollars a year; he was at a loss what to do, but told me that he would reflect upon it, consult his wife, and give me an answer at the hut the next day.

I then visited the *alcalde*, but he was too tipsy to be susceptible of any impression; prescribed for several patients; and instead of going to Don Gregorio's sent him a polite request by Don Jose Maria to mind his own business and let us alone; returned and passed the rest of the day among the ruins. It rained during the night, but again cleared off in the morning, and we were on the ground early. My business was to go around with the workmen to clear away trees and bushes, dig, and excavate, and prepare monuments for Mr. Catherwood to copy. While so engaged, I was called off by a visit from Don Jose Maria, who was still undecided what to do; and not wishing to appear too anxious, told him to take more time, and come again the next morning.

The next morning he came, and his condition was truly pitiable. He was anxious to convert unproductive property into money, but afraid, and said that I was a stranger, and it might bring him into difficulty with the government. I again went into proof of character, and engaged to save him harmless with the government, or release him. Don Miguel read my letters of recommendation, and re-read the letter of General Cascara. He was convinced, but these

papers did not give him a right to sell his land ; the shade of suspicion still lingered ; for a finale, I opened my trunk, put on a diplomatic coat, with a profusion of large eagle buttons. I had on a Panama hat, soaked with rain and spotted with mud, a check shirt, white pantaloons, yellow up to the knees with mud, and was about as *outré* as the negro king who received a company of British officers on the coast of Africa in a cocked hat and military coat, without any inexpressibles ; but Don Jose Maria could not withstand the buttons on my coat ; the cloth was the finest he had ever seen ; and Don Miguel, and his wife, and Bartale realized fully that they had in their hut an illustrious incognito. The only question was who should find paper on which to draw the contract. I did not stand upon trifles, and gave Don Miguel some paper, who took our mutual instructions, and appointed the next day for the execution of the deed.

The reader is perhaps curious to know how old cities sell in Central America. Like other articles of trade, they are regulated by the quantity in market and the demand ; but, not being staple articles, like cotton and indigo, they were held at fancy prices, and at that time were dull of sale. I paid fifty dollars for Copan. There was never any difficulty about price. I offered that sum, for which Don Jose Maria thought me only a fool ; if I had offered more, he would probably have considered me something worse.

We had regular communications with the hacienda by means of Francisco, who brought thence every morning a large waccal of milk, carrying it a distance of three miles and fording the river twice. The ladies of the hacienda had sent us word they intended paying us a visit, and this morning Don Gregorio's wife appeared, leading a procession of all the women of the house, servants, and children, with two of her sons. We received them among the ruins,

seated them as well as we could, and, as the first act of civility, gave them cigars all around. It can hardly be believed, but not one of them, not even Don Gregorio's sons, had ever seen the "idols" before, and now they were much more curious to see Mr. C.'s drawings. In fact, I believe it was the fame of these drawings that procured us the honor of the visit. In his heart, Mr. C. was not much happier to see them than the old Don was to see us, as his work was stopped, and every day was precious. As I considered myself in a manner the proprietor of the city, I was bound to do the honors; and, to the distress of Mr. C., brought them all back upon him.

Obliged to give up work, we invited them down to the hut to see our accommodations; some of them were our patients and reminded us we had not sent the medicines we promised. The fact is, we avoided giving medicines when we could, among other reasons, from an apprehension that if any one happened to die on our hands we should be held responsible; but our reputation was established; honors were buckled on our backs and we were obliged to wear them. These ladies, in spite of Don Gregorio's crustiness, had always treated us kindly, and we would fain have shown our sense of it in some other mode than by giving them physic; but to gratify them in their own way, we distributed among them powders and pills, with written directions for use; and when they went away escorted them some distance, and had the satisfaction of hearing that they avenged us on Don Gregorio by praises of our gallantry and attentions.

[As regards the wonderful discoveries which Mr. Stephens made in his low-priced city, the story is much too extensive to be given here, and those who would know more about these remarkable ruins must refer to his "Incidents of Travel in Central America, Chiapas, and Yucatan," which will be found abundantly worth perusal.]

THE ROUTE OF THE NICARAGUA CANAL.

JULIUS FROEBEL.

[The waters which it is proposed to utilize in the construction of the Nicaragua Canal, mainly those of the San Juan River and the Lake of Nicaragua, are of sufficient interest to call for some description at our hands, and we subjoin, from Froebel's "Seven Years of Travel in Central America," an account of a journey on those waters.]

At that time [1850] steamboats were not yet plying on the San Juan River and the Lake of Nicaragua, and I had to content myself with the accommodations of one of the large canoes of the natives called *bongos*, which were then the principal means of transport between the coast and the interior, for passengers as well as for merchandise. In company with two Americans, who, like myself, were anxious to proceed to Granada, I hired one of the largest of these clumsy little crafts, manned with ten boatmen or *marineros*, together with their captain or *patron*, all of them colored people from the interior. We laid in provisions for a fortnight, such being the full time of a passage which is now performed by steamers in two days.

We left San Juan on the 23d of November, and arrived at Granada on the 5th of the following month. In reference to the beauties of nature the trip is one of the most interesting that can be made, though the state of my health prevented my enjoying it. . . . An open shed, furnished with a hammock and surrounded by a plantain garden of half an acre, was the only improvement in an extent of more than a hundred miles. With this single exception, and with that of the site of the old castle of San Juan, more generally known by the popular name of

Castillo Viejo, the banks were covered with trees to the water's edge, their branches often bearing a vegetation of vines, climbers, and parasites, so densely interwoven that the whole appeared like a solid wall of leaves and flowers.

I shall never forget the impressions of one night and morning on this river. Our boat had anchored in the midst of the stream. Strange forms of trees, spectre-like in the dark, stood before us, and seemed to move as the eye strove in vain to make out their real shape. From time to time a splash in the water, caused by the movement of an alligator, the bellowing of a manatee, the screeching of a night-bird, or the roar of some beast of the forest, broke the silence, and mingled at last with my feverish dream.

In the morning a song our boatmen addressed to the Virgin roused me from my sleep. It was a strain of plaintive notes in a few simple but most expressive modulations. Several years later I heard them again, sung by the Mexican miners in the subterraneous chapel of the quicksilver mine of New Almaden in California, and I never shall forget the deep emotion felt on both occasions, so widely different in every other respect. In the latter the scene passed in a narrow excavation before a little altar cut out of the natural rock, on which, before a gilded image of the Virgin, two thin tallow candles were casting their scanty light over the forms of fifteen or twenty men calling down the blessing of Heaven on their day of work in the interior of the mountain. In the former, it was in the brightness and splendor of a morning of which no description can convey a full idea to one who has had no experience in the most favored regions of a tropical climate. The sun was just rising, and as the first rays, gilding the glassy leaves of the forest, fell upon the bronze-colored bodies of our men, letting the naked forms of their athletic frames appear in all the contrast of light and shade, while

accents plaintive and imploring strained forth from their lips, I thought to hear the sacred spell by which, unconscious of its power, these men were subduing their own half-savage natures.

At once the same song was repeated from behind a projecting corner of the bank, and other voices joined those of our crew in the sacred notes. Two canoes, covered from our view, had anchored near us during the night. The song at last died away in the wilderness. A silent prayer—our anchor was raised, and, with a wild shout of the crew, twelve oars simultaneously struck the water. The sun was glittering in the river. The tops of the trees were steeped in light, monkeys were swinging in the branches, splendid macaws flew in pairs from bank to bank; all around exhibited the glory and brightness of superabundant nature.

Near the mouth of the river, as far up as the higher end of its delta, the banks are almost on the water's level, overgrown with reeds, mangroves, and a low species of palm-tree, the latter forming extensive thickets in the swamps. After a distance of fourteen or fifteen miles the land gradually becomes a little higher, and steep embankments of a brown or reddish clay rise to some ten or twenty feet above the water. The low palm thickets of the swampy region disappear, and a vegetation of splendid trees, mostly exogenous, overhung with blooming vines, takes their place. Flowery garlands, swung from branch to branch, hang over the stream, while now and then the slender shafts of one of the tallest species of the palm tribe wafts its little crown of feathery leaves high over the gorgeous masses of the heavier foliage.

Eight or ten miles higher up the region of the *randales*, or rapids, begins. Here the river, locked in between wooded hills, presents a new character of scenery. The

trees, covering the hill-sides with an almost impenetrable forest, exhibit an extraordinary variety of forms in striking contrast. The most interesting situation in this region is that of the *Castillo Vièjo*. Here, where the river foams over a bed of rocks, stands the old Spanish castle of *Don Juan*. Since 1780 it has remained a ruin, though Nicaragua has always kept a few soldiers here, occupying a shed at the foot of the hill on which the remains of the fort are seen. In the civil wars of the last years this place has repeatedly been occupied and evacuated by the contending powers.

Among the rapids, that of the *Castillo Vièjo* is the only one that forms a real impediment in the navigation of the river. With the necessary caution canoes may descend, and I myself have passed over it on my way back to the coast in a bongo carrying forty passengers; upward, however, all boats must be towed, after having been unloaded. . . .

Above the region of the rapids the river is almost stagnant, and the designation of the *aguas muertas*, or dead waters, is not inappropriately applied to it. It is a deep and still water, full of fish, with low and swampy banks, on which the palm thickets of the delta reappear.

Beyond this latter portion of the river the Lake of Nicaragua opens to the view. On the little promontory formed by the lake and the inlet of the river the custom-house of Nicaragua, designated by the high-sounding name of the "fort of San Carlos," has been established. There are a few houses at this place, and a small military force is kept up to protect the establishment and, in case of necessity, enforce the payment of the dues. The ruins of an old Spanish castle still exist here, but they are hidden among the trees and shrubs with which they are overgrown.

The view from this elevation has a peculiar character of

grandeur. At the foot of the hill a broad sheet of water is spread, studded, in the immediate neighborhood, with some green islands of diminutive dimensions, and extending, in a northwesterly direction, as far as the eye can reach. To the left, a low wooded shore begins at the outlet of the lake, and continues in that direction till it is lost in the distance of the western horizon. A chain of high mountains, cast in a shroud of dark forests, rises in the rear, covering an unknown region of Costa Rica. It comprises several active volcanoes, which on late occasions have illumined the surface of the lake by their flames and red-hot streams of lava. To the right, the view does not extend beyond the nearest hills; but at a short distance from the lake it ranges over a long line of broken eminences, with the mountain-chain of Chontales in the rear, bordering like a wall the table-land of Upper Mosquitia. Hill and dale, forests and savannas, appear in endless variety in this direction. On the distant horizon in the centre of the view the two cones of the island of Ometepe are seen, faintly traced, and as their forms are lifted upward by refraction, they seem to swim over the water.

At the very spot where the San Juan River leaves the lake the Rio Frio enters it. This is a river coming down from the mountains of Costa Rica, through an absolute wilderness which, it is asserted, has never been trodden by the foot of a civilized man. The dense forests of this region are inhabited by a warlike tribe of Indians who refuse to have any intercourse with the rest of the world. They are said to be of very fair complexion, a statement which has caused the appellation of *Indios blancos* or *Gua-tusos*,—the latter name being that of an animal of reddish-brown color, and intended to designate the color of their hair. It is stated that not only do they not allow a foreigner to enter their territory, but that they are even in

the habit of killing those of their own people who again fall into their hands after having been away among the civilized inhabitants of the neighboring settlements. . . .

While in California, I heard of a young German, living in the neighborhood of San Francisco, who recounts a little romance of adventures he met with among this people. Though the story was not told to me by the man himself, still, as it was repeated by a trustworthy friend who had derived it from the original source, I may be allowed to introduce it here.

The young man was on his way to California. When at San Carlos he had some difference or quarrel with his travelling companions, and, being afraid of a pistol-ball or a bowie-knife, took the desperate resolution of swimming to the opposite side of the river, where he soon fell into the hands of a body of these Indians. He was tied to a tree, and they then held a council as to the manner—so at least he believed—of putting him to death. Suddenly, however, as it has happened before in similar cases, a young girl, the daughter of the chief, hurried forth, clasped her arms round the neck of my blue-eyed countryman, and gave a favorable turn to his fate.

Of course, he married the girl, and, as the consort of this Indian princess, he spent a few months in the forest, till he was ungrateful enough to forsake his generous bride, and avail himself of an opportunity to swim back to San Carlos, continuing, after this romantic episode, his journey to California.

According to his statements, he would have remained with the Indians had he been able to endure the life in the wilderness, which he found rather too ill-provided with accommodations for enjoying his honeymoon. During the rainy season the tribe lived almost exclusively on the trees, and he speaks in very high terms of the dexterity

with which they would leap from branch to branch, a mode of travelling in which he often found it too difficult to follow his nimble spouse. At the time of each full moon the whole tribe met in council, for which the place was designated from one meeting to the next by the chief, and whatever was done by common agreement was regulated according to the phases of the moon.

Some years before the period of my first arrival in Nicaragua, the officer then in command of the fort of San Carlos fitted out an expedition for the purpose of exploring the country on the Rio Frio, which is known to be rich in gold. This little corps, having hit upon a deserted village of the Indians on the bank of the river, and resting in the shade of some trees in the outskirts of the forest, was suddenly assailed by a shower of arrows, and, with the exception of the commanding officer, who was severely wounded, but succeeded in hiding himself between the reeds till a boat from the fort came to his rescue, every man of the expeditionary force was killed. . . .

Our passage up the river had taken us nine days, making an average progress of about twelve miles per day. Three days more were spent in crossing the lake. With the native boatmen it seems to be a rule to abstain from using oars even when they are becalmed. Before we left the *aguas muertas* a small tree had been cut. This was now erected as a mast, a sail was spread, and slowly we began to move in the direction of Granada. Our navigation was of a very primitive kind. At night, while every soul on board slept soundly, our bongo was left to find its own way, which, however, it refused to do; for when we awoke at dawn I saw we were heading to the place we had come from. By and by, nevertheless, we drew nearer to our point of destination. When we had left the two peaks of Ometepe on one side, the summit of Mombacho, designating

the site of Granada, gradually rose from the water. We passed the island of Zapotera, celebrated for its idols, which have been discovered and described by my friend Mr. Squier. It is uninhabited, and may be said to be a mountain covered with a forest, here and there interrupted by a savanna. Like other islands in this lake, it contains numerous wild animals, such as deer, peccaries, monkeys, and panthers. . . .

On the evening of the 5th of December we doubled the outermost rock of the *Corrales* or *Isletas*, a cluster of more than a hundred diminutive islands at the foot of the Mom-bacho, and a few hours after dark landed on the *playa*, or beach, of Grenada.

THE DESTRUCTION OF SAN SALVADOR.

CARL SCHERZER.

[Dr. Carl Scherzer, in his "Travels in the Free States of Central America," gives a graphic picture of the destruction, in 1854, of the city of San Salvador by an earthquake, as witnessed by his friend Dr. Wagner, whose description of the event is well worth repeating. This city, which stands on a plateau about two thousand feet above the Pacific, was built by the Spaniards in 1528, and, with the exception of Guatemala, was the neatest and handsomest of Central American cities, possessing several handsome churches, a new university, and numerous attractive residences.]

ON the 12th and 13th of April, 1854, there was heard in the upper part of the city, towards the southwest, a hollow, subterranean, rumbling noise, which recurred at short intervals and continued for several minutes, appearing to come from the mountains which form a kind of large semi-circle at the foot of the volcano, but there was no shock whatever. On the Good Friday, at half-past seven in the

morning, two slight shocks, quickly succeeding each other, were felt, and about ten minutes afterwards a rather stronger one. The roof and walls of my cottage shook, without my at first perceiving the cause; but a young Spaniard, who waited on me, said, quietly, "*Es un temblor.*" Being a native of the country, he was accustomed to the phenomenon, and thought little of it.

These tremblings and rockings of the earth, that seem so terrible to us Europeans, are such ordinary occurrences in the environs of San Salvador that the district has acquired the name of the "swinging mat;" but these shocks, though frequent, had never been hitherto of the violent and destructive character which they have assumed at Valparaiso and Lima, where about once in a century the destruction of a town is reckoned on as a matter of course.

The volcano of Isalco, too, being in constant activity, and only forty-eight miles south of the city of San Salvador, had always been regarded as a chimney and safety-valve, affording a free vent for the steam and other dangerous products of the subterranean furnace.

The shocks were repeated at tolerably regular intervals, two or three in an hour, during the whole of the Good Friday, and all had the same direction,—namely, from west-southwest to east-northeast; at which point, a league from the town, lies the great crater of Cuscatlan, about five hundred feet above San Salvador.

The ceremonies of the Good Friday proceeded with the accustomed pomp, and people did not think of disturbing their processions, or their visits to the cathedral, on account of the earthquake; though occasionally, when there came a shock rather stronger than usual, some of the devout crowd did turn pale and make a rush towards the doors.

At half-past nine in the evening there came a shock so violent that the houses were shaken to the foundations, the

roofs cracked, plaster and tiles fell, and the walls in many places were rent. The houses are all low and broad, without upper stories, the walls mostly of clay, which is very elastic, and the rafters made of pliable, closely-plaited cane, admirably adapted to resist the most violent shocks; otherwise the houses would have fallen in a mass with this one, which lasted eight seconds, the ground undulating like the ocean. Every one rushed out into the open air, but a full hour passed without any further movement. We determined, nevertheless, not to sleep under a roof; but my countryman, Mr. Kronmeier, the Prussian vice-consul, who came home about eleven o'clock, laughed at our caution, and went to bed as usual in his bedroom. He was used to these unpleasant occurrences; though he confessed that, during a residence of sixteen years in Central America and Mexico, he had never felt in one day so many shocks as during the one just past.

The old volcano of Cuscatlan, from which the shocks appeared to proceed, lies, as I have said, about three miles from the city; viewed from this direction, it forms a beautiful cone, with a gently rounded summit, and its sides are clothed from top to bottom with wood; its crater is still quite perfect, a mile and a half in diameter, and filled with water at the bottom. . . . There exists no certain record of the former activity of this volcano; but according to tradition an eruption of lava from a cleft in its side took place in 1650, and overwhelmed the village of Neliopa; but according to others it was merely an eruption of mud and not of fire. . . .

The morning of Easter Sunday was announced as usual by the firing off of rockets and a joyous burst of military music. The multitude betook themselves in festival procession to the Cathedral, to witness the celebration of high mass; the houses were gayly adorned with branches of

palm and banana-leaves, and the "*Sanctissimum*" was borne in triumph through the streets, followed by crowds of señors and señoritas in their gayest attire. . . . On this Easter Day, as on preceding ones, the people, after having performed their devotions like good Catholics, gave themselves up to festivity and enjoyment, and the day closed with music, feasting, and fireworks.

Immediately after nine o'clock, however, a shock occurred more violent than the strongest felt on the Good Friday. I was unwell with a slight feverish attack, and had gone to bed, but was awakened by the noise. Some walls fell in, many houses were rent, and a part of the ceiling of my room fell, striking me on the head and face, and for some minutes blinding me with the dust. I sprang from my bed, and groped my way to the door, which unluckily I had locked; but after a time I succeeded in getting it open, and made my way to the court-yard, where I found the rest of the inhabitants of the house praying and screaming.

After a few moments had elapsed, however, they had quite got over their fright, and were laughing and joking at their previous consternation and precipitate flight. Unless the houses actually fall, people do not, after the first moment, think much of these shocks, but this time they did take the precaution to put all their doors open, and had their beds carried out into the court. Mine was placed under the gallery of the corridor, and a great deal of compassion was expressed for me when they found I had been a little hurt. A young doctor, who occupied the room next to mine, thought there would be no strong "temblor" again to-night, but an aged priest said that this house was old and decayed, and it was very necessary to be careful. My housemates then went back into their rooms, and, though they kept the doors open, consumed with a good appetite the remainder of the Easter feast, the conversation the

while turning, of course, almost exclusively on the "temblor."

I lay gazing up into the night sky, not at all inclined to sleep. The day had been, as usual, very warm, the thermometer at noon showing 88° Fahrenheit; a heavy mass of clouds (strato-cumulus) lay piled up about the waning moon, but dispersed towards ten o'clock, and the moon then shone brightly through a clear and tranquil atmosphere. A few light scattered clouds of the cirrus and cirro-stratus lay motionless at a few points on the horizon, but there was nothing to portend any unusual phenomenon.

At thirty minutes past ten, however, came the shock that laid the city of San Salvador in ruins. It began with a terrific noise, the earth heaving as if lifted by a subterranean sea; and this movement, and the thunder accompanying it, continued for ten or twelve seconds, while the crash and uproar of falling buildings were still more deafening than the thunder. An immense and blinding cloud of dust arose, through which were heard the shrieks and supplications of the flying people, calling on "Maria Santissima" and all other saints; and at length a hymn, in thousand-voiced chorus, which was heard plainly, through all the other noises, at a distance of a mile and a half from the town, by a family of German emigrants with whom I was acquainted.

I had witnessed many terrible scenes of war and revolution in the Old World, but there at least they were visible enemies of flesh and blood with whom people had to contend; but here were unknown, terrific, incalculable forces at work, of whose nature they had only the vaguest idea. The shocks went on, sometimes stronger, sometimes weaker, and with very brief intervals, until, by the evening of Easter Monday, one hundred and twenty had been counted, and they were accompanied all the time by hollow

thunder and detonations, as if a tremendous battle were raging beneath the earth. People now abandoned all thoughts of their property, and sought only to save their lives, for, with the continual oscillations of the ground in all directions, rents and chasms were opening on it, so that no one knew whether it might not the next moment yawn beneath their feet and engulf every living soul. After every new shock I noticed that the people changed their prayers and the names of the saints they were invoking; but whether the saints did not hear, or could not or would not help them, the subterranean artillery continued to bellow forth its fearful salvos with unmitigated fury.

Towards one in the morning, one of my acquaintances came climbing over the ruined wall of our court-yard to inquire after me, as he knew I was unwell; and he then proposed to me to take a walk through the town by moonlight. We took the direction of the market-place, where the Cathedral stood; and from what I saw I can truly say that the whole city was destroyed, for I did not see a *single* house uninjured. Those that were not lying in ruin had so many rents, and damages of various kinds, as to be quite uninhabitable. The Cathedral—an elegant rather than imposing building—had escaped with less damage than many other churches; but the clock-tower had fallen, the portal was lying in fragments, and the walls were gaping open in two or three places.

The interior of the Franciscan convent, the door of which stood wide open, presented a sad picture of desolation. So many stones had fallen from the roof and such large portions of the walls, that most of the altars lay scattered in fragments, or were covered with rubbish; several of the colossal figures of saints had fallen from the niches, and lay with their finery all covered with dust and stones; but the people, who the day before had been carrying them

about in triumph, now did not trouble themselves any more about them: everybody was occupied in saving his life, or, if possible, his most valuable possessions.

Of the new university buildings only one wing was left standing: it was the one containing the clock-tower, and in this the clock was still going on, regularly striking the hours. The roof of the Episcopal Palace had fallen in, and some stones had struck the sacred head of the bishop with no more ceremony than had been shown towards our profane pates, though this bishop was Don Tomaso Saldana, a man most justly held in high repute for the excellence of his life. Much injury had also been sustained by the President of the Republic, Señor Duenas, who was originally a monk, but afterwards a lawyer and statesman, and perhaps the man of the greatest capacity in the whole country.

The streets were empty and desolate, and we had to scramble over heaps of ruins to get through them: not a creature was to be seen but a few sentinels, and in the interior of the houses also there reigned the stillness of the grave. Even in the broadest streets the people did not think themselves safe, and rich and poor were huddled together indiscriminately in the great square, praying, singing, and screaming whenever a new shock startled them with its terrible explosion; but fortunately, in the midst of all this, the new President, Don José Maria San Martin, showed much presence of mind, and gave his orders for the preservation of property with much composure.

[Fortunately, the previous warning shock had driven most of the people from their houses, a chance which saved most of their lives, though several hundreds were found buried in the ruins.]

The rising sun of Easter Monday morning shone on a mournful spectacle, and the few people who were left in the town wandered about looking pale and worn, the

women with a total disregard of their dress very unusual with them. Among these I noticed the wife of the President, who was entreating him to fly, like so many others, from the scene of danger; but he remained faithful to duty, and was exerting himself vigorously to keep order. He had established a kind of court-martial under a tent in the University Square, before which every thief caught in the act was brought, and, on the evidence of two witnesses against him, immediately shot.

Since the ruins of San Salvador could now no longer offer me a shelter, I set off on foot, at an early hour, towards the hacienda of Mr. Kronmeier, and on the way felt four more shocks, the strongest of which lasted six or seven seconds, and was accompanied by violent oscillations of the ground, and detonations like the salvos from Vesuvius, when, in the lesser eruptions, you stand near the crater while stones are being thrown up. I was now more than ever convinced that the centre of the subterranean action was very near, and that the explosive steam and glowing masses of the interior were seeking a new outlet.

The country-house of Mr. Kronmeier was still standing, but its thick walls had been rent in so many places that it offered only an uncomfortable and insecure shelter. From the steep cliffs on the left of the river's bed masses of rock and earth had fallen, and the hot springs at the foot of the hill had ceased to flow; the mill-stream was dry; one of the cocoa-palms was prostrate, and the whole landscape, so lovely before, had a dejected and melancholy aspect, increased, of course, by the general flight of the inhabitants of the district. . . . The shocks still went on, though they were not so frequent as on the two Easter nights; and, as the subterranean forces were evidently struggling for a new vent, no one could feel himself safe within the sphere of their operations.

Many of the people whom we met, however, were leaving the place, though not so much for any reason of this kind as on account of a prophecy of the worthy bishop, "that before the new moon the whole district of San Salvador, with the ruins of the city, would be swallowed up." But, unluckily for the bishop's character as a prophet, the prediction was not fulfilled.

SCENES IN TRINIDAD AND JAMAICA.

JAMES ANTHONY FROUDE.

[Froude is scarcely known as a traveller, his reputation being founded in another field of literature, that of history. Yet he is the author of two works of travel,—"*Oceana*," from which we have elsewhere given a selection, and "*The English in the West Indies*," from which our present selection is derived. He visited most of the British West Indies, and has given picturesque descriptions of them all. We append some extracts from his account of Trinidad.]

TRINIDAD is the largest, after Jamaica, of the British West Indian Islands, and the hottest absolutely after none of them. It is square-shaped, and, I suppose, was once a part of South America. The Orinoco River and the ocean-currents between them have cut a channel between it and the mainland, which has expanded into a vast shallow lake known as the Gulf of Paria. The two entrances by which the gulf is approached are narrow, and are called *bocas*, or mouths,—one the Dragon's Mouth, the other the Serpent's. When the Orinoco is in flood the water is brackish, and the brilliant violet hue of the Caribbean Sea is changed to a dirty yellow; but the harbor which is so formed would hold all the commercial navies of the world, and seems

formed by nature to be the depot one day of an enormous trade.

[Landing was made at Port of Spain, the capital, so called when Trinidad was a Spanish possession, and Mr. Froude found pleasant quarters in the house of a friend.]

The town has between thirty and forty thousand people living in it, and the rain and the Johnny crows [a black vulture that acts as scavenger] between them keep off pestilence. Outside is a large savanna or park, where the villas are of the successful men of business. One of these belonged to my host, a cool, airy habitation, with open doors and windows, overhanging portico, and rooms into which all the winds might enter, but not the sun. A garden in front was shut off from the savanna by a fence of bananas. At the gate stood as sentinel a cabbage-palm a hundred feet high; on the lawn mangoes, oranges, papaws, and bread-fruit-trees, strange to look at, but luxuriantly shady. Before the door was a tree of good dimensions, whose name I have forgotten, the stem and branches of which were hung with orchids which G—— had collected in the woods.

The borders were blazing with varieties of the single hibiscus, crimson, pink, and fawn-color, the largest that I had ever seen. The average diameter of each single flower was from seven to eight inches. Wind streamed freely through the long sitting-room, loaded with the perfume of orange-trees; on table and in bookcase the hand and mind visible of a gifted and cultivated man. The particular room assigned to myself would have been delightful, but that my possession of it was disputed, even in daylight, by mosquitoes, who for blood-thirsty ferocity had a bad pre-eminence over the worst that I had ever met with elsewhere. I killed one who was at work upon me, and

examined him through a glass. Bewick, with the inspiration of genius, had drawn his exact likeness as the devil,—a long black stroke for a body, a nick for a neck, horns on the head, and a beak for a mouth, spindle arms, and longer spindle legs, two pointed wings, and a tail. Line for line, there the figure was before me, which in the unforgettable tail-piece is driving the thief under the gallows, and I had a melancholy satisfaction in identifying him. I had been warned to be on the lookout for scorpions, centipedes, jiggers, and land-crabs, who would bite me if I walked slipperless over the floor in the dark. Of these I met with none, either there or anywhere, but the mosquito of Trinidad is enough by himself. For malice, mockery, and venom of tooth and trumpet he is without a match in the world.

From mosquitoes, however, one could seek safety in tobacco-smoke, or hide behind the lace curtains with which every bed is provided. Otherwise I found every provision to make life pass deliciously. To walk is difficult in a damp, steamy atmosphere, hotter during daylight than the hottest forcing-house in Kew. . . . Beautiful, however, it was beyond dispute. Before sunset a carriage took us around the savanna. Tropical human beings, like tropical birds, are fond of fine colors, especially black human beings, and the park was as brilliant as Kensington Gardens on a Sunday. At nightfall the scene became even more wonderful, air, grass, and trees being alight with fire-flies, each as brilliant as an English glow-worm. The palm-tree at our own gate stood like a ghostly sentinel clear against the starry sky, a single long dead frond hanging from below the coronet of leaves and clashing against the stem as it was blown to and fro by the night-wind, while long-winged bats swept and whistled over our heads.

[The governor's residence and the botanical gardens next call for attention.]

The "Residence" stands in a fine situation, in large grounds of its own, at the foot of the mountains. It has been lately built, regardless of expense, for the colony is rich, and likes to do things handsomely. On the lawn, under the windows, stood a tree which was entirely new to me, an enormous ceiba or silk-cotton-tree, umbrella-shaped, fifty yards in diameter, the huge and buttressed trunk throwing out branches so massive that one wondered how any woody fibre could bear the strain of their weight, the boughs twisting in and out till they made a roof over one's head, which was hung with every fantastic variety of parasites.

Vast as the ceibas were which I saw afterwards in other parts of the West Indies, this was the largest. The ceiba is the sacred tree of the negro, the temple of Jumbi, the proper house of Obeah. To cut down one is impious. No black in his right mind would wound even the bark. A Jamaica police officer told me that if a ceiba had to be removed, the men who used the axe were well dosed with rum to give them courage to defy the devil.

From Government House we strolled into the adjoining Botanical Gardens. I had long heard of the wonders of these. The reality went beyond description. Plants with which I was familiar as *shrubs* in English conservatories were here expanded into forest giants, with hundreds of others of which we cannot raise even Lilliputian imitations. Let man be what he will, nature in the tropics is always grand. Palms were growing in the greatest luxuriance, of every known species, from the cabbage towering up into the sky to the fan-palm of the desert whose fronds are reservoirs of water.

Of exogenous trees the majority were leguminous in

some shape or other, forming flowers like a pea or vetch and hanging their seeds in pods; yet in shape and foliage they distanced far the most splendid ornaments of an English park. They had Old-World names with characters wholly different: cedars which were not conifers, almonds which were no relations of peaches, and gum-trees as unlike eucalypti as one tree can be unlike another.

Again, you saw ferns which you seemed to recognize till some unexpected anomaly startled you out of your mistake. A gigantic Portugal laurel, or what I took for such, was throwing out a flower direct from the stem like a cactus. Grandest among them all, and happily in full bloom, was the sacred tree of Burmah, the *Amherstia nobilis*, at a distance like a splendid horse-chestnut, with crimson blossoms in pendant bunches, each separate flower in the convolution of its parts exactly counterfeiting a large orchid, with which it had not the faintest affinity, the *Amherstia* being leguminous like the rest.

Underneath, and dispersed among the imperial beauties, were spice-trees, orange-trees, coffee plants, and cocoa, or again, shrubs with special virtues or vices. We had to be careful what we were about, for fruits of fairest appearance were tempting us all round. My companion was preparing to eat something to encourage me to do the same. A gardener stopped him in time. It was *nux vomica*. I was straying along a less frequented path, conscious of a heavy vaporous odor, in which I might have fainted had I remained exposed to it. I was close to a manchineel-tree.

Prettiest and freshest were the nutmegs, which had a glen all to themselves and perfumed the surrounding air. In Trinidad and in Grenada I believe the nutmegs are the largest that are known, being from thirty to forty feet high; leaves brilliant green, something like the leaves of an orange, but extremely delicate and thin, folded one over

the other, the lowest branches sweeping to the ground till the whole tree forms a natural bower, which is proof against a tropical shower. The fragrance attracts moths and flies; not mosquitoes, who prefer a ranker atmosphere. I saw a pair of butterflies the match of which I do not remember even in any museum, dark blue shot with green like a peacock's neck, and the size of English bats. I asked a black boy to catch me one. "That sort no let catchee, massa," he said; and I was penitently glad to hear it.

Among the wonders of the garden are the vines, as they call them, that is, the creepers of various kinds that climb about the other trees. Standing in an open space there was what once had been a mighty "cedar." It was now dead, only the trunk and dead branches remaining, and had been murdered by a "fig"-vine which had started from the root, twined itself like a python round the stem, strangled out the natural life, and spreading out in all directions, had covered boughs and twigs with a foliage not its own. So far the "vine" had done no worse than ivy does at home, but there was one feature about it which puzzled me altogether. The lowest of the original branches of the cedar were about twenty feet above our heads. From these in four or five places the parasite had let fall shoots, perhaps an inch in diameter, which descended to within a foot of the ground and then suddenly, without touching that or anything, formed a bight like a rope, went straight up again, caught hold of the branch from which they started, and so hung suspended exactly as an ordinary swing.

In three distinctly perfect instances the "vine" had executed this singular evolution, while at the extremity of one of the longest and tallest branches high up in the air it had made a clean leap of fifteen feet without visible help and had caught hold of another tree adjoining on the

same level. These performances were so inexplicable that I conceived that they must have been a freak of the gardener's. I was mistaken. He said that at particular times in the year the fig-vine threw out fine tendrils which hung downward like strings. The strongest among them would lay hold of two or three others and climb up upon them, the rest would die and drop off, while the successful one, having found support for itself above, would remain swinging in the air and thicken and prosper. The leap he explained by the wind. I retained a suspicion that the wind had been assisted by some aspiring energy in the plant itself, so bold it was and so ambitious.

But the wonders of the garden were thrown into the shade by the cottage at the extreme angle of it, where Kingsley* had been the guest of Sir Arthur Gordon. It is a long straggling wooden building with deep verandas lying in a hollow overshadowed by trees, with views opening out into the savanna through arches formed by clumps of tall bamboos, the canes growing thick in circular masses and shooting up a hundred feet into the air, where they meet and form frames for the landscape, peculiar and even picturesque when there are not too many of them. These bamboos were Kingsley's special delight, as he had never seen the like of them elsewhere. The room in which he wrote is still shown, and the gallery where he walked up and down with his long pipe. His memory is cherished in the island as of some singular and beautiful presence which still hovers about the scenes which so delighted him in the closing evening of his own life.

[Happiness makes its home with the negroes of Trinidad, whom nature keeps in pristine idleness. They have little to do other than to pull and eat.]

* Charles Kingsley, who wrote here his "At Last," descriptive of tropical scenes.

In Trinidad there are eighteen thousand freeholders, most of them negroes and representatives of the old slaves. Their cabins are spread along the road on either side, overhung with bread-fruit-trees, tamarinds, calabash-trees, out of which they make their cups and water-jugs; the luscious granadilla climbs among the branches; plantains throw their cool shade over the doors; oranges and limes and citrons perfume the air, and droop their boughs under the weight of their golden burdens. There were yams in the gardens and cows in the paddocks, and cocoa-bushes loaded with purple or yellow pods. Children played about in swarms in happy idleness and abundance, with schools, too, at intervals, and an occasional Catholic chapel, for the old religion prevails in Trinidad, never having been disturbed.

What form could human life assume more charming than that which we were now looking on? Once more, the earth does not contain any peasantry so well off, so well cared for, so happy, so sleek and contented as the sons and daughters of the emancipated slaves in the English West Indian Islands. Sugar may fail the planter, but cocoa, which each peasant can grow with small effort for himself, does not fail and will not. He may "better his condition," if he has any such ambition, without stirring beyond his own ground, and so far, perhaps, his ambition may extend, if it is not turned off upon politics.

Even the necessary evils of the tropics are not many or serious. His skin is proof against mosquitoes. There are snakes in Trinidad as there were snakes in Eden. "Plenty snakes," said one of them who was at work in his garden, "plenty snakes, but no bitee." As to costume, he would prefer the costume of innocence if he were allowed. Clothes in such a climate are superfluous for warmth, and to the minds of the negroes, unconscious as they are of shame,

superfluous for decency. European prejudice, however, still passes for something; the women have a love for finery, which would prevent a complete return to African simplicity; and in the islands which are still French, and in those like Trinidad, which the French originally colonized, they dress themselves with real taste. They hide their wool in red or yellow handkerchiefs, gracefully twisted; or perhaps it is not only to conceal the wool. Columbus found the Carib women of the island dressing their hair in the same fashion.

The water-works, when we reached them, were even more beautiful than we had been taught to expect. A dam has been driven across a perfectly limpid mountain stream; a wide open area has been cleared, levelled, strengthened with masonry, and divided into deep basins or reservoirs, through which the current continually flows. Hedges of hibiscus shine with crimson blossoms. Innumerable humming-birds glance to and fro among the trees and shrubs, and gardens and ponds are overhung by magnificent bamboos, which so astonished me by their size that I inquired if their height had been measured. One of them, I was told, had lately fallen, and was found to be one hundred and thirty feet long. A single drawback only there was to this enchanting spot, and it was again the snakes. There are huge pythons in Trinidad which are supposed to have crossed the straits from the continent. Some washerwomen at work in the stream had been disturbed a few days before our visit by one of these monsters, who had come down to see what they were about. They are harmless, but trying to the nerves.

[We shall conclude this selection with a leap from Trinidad to Jamaica, and the relation of an adventure experienced by our author in that island. He was on his way back from an excursion into the island.]

The train from Porus brought us back to Kingston an hour before sunset. The evening was lovely, even for Jamaica. The sea-breeze had fallen, the land-breeze had not risen, and the dust lay harmless on road and hedge. Cherry Garden, to which I was bound, was but seven miles distant by the direct road, so I calculated on a delightful drive which would bring me to my destination before dark.

So I calculated; but alas! for human expectation. I engaged a "buggy" at the station, with a decent-looking conductor, who assured me that he knew the way to Cherry Garden as well as to his own door. His horse looked starved and miserable. He insisted that there was not another in Kingston that was more than a match for it. We set out, and for the first two or three miles we went on well enough, conversing amicably on things in general. But it so happened that it was market day. The road was thronged with women plodding along with their baskets on their heads, a single male on a donkey to each detachment of them, carrying nothing, like an officer with a detachment of soldiers.

Foolish indignation rose in me, and I asked my friend if he was not ashamed of seeing the poor creatures toiling so cruelly, while their lords and masters amused themselves. I appealed to his feelings as a man, as if it were likely that he had got any. The wretch only laughed. "Ah, massa," he said, with his tongue in his cheek, "women do women's work, men do men's work,—all right." "And what is men's work?" I asked. Instead of answering he went on, "Look at they women, massa,—how they laugh, how happy they be! Nobody more happy than black woman, massa."

I would not let him off. I pricked into him, till he got excited too, and we argued and contradicted each other, till at last the horse, finding he was not attended to, went his own way and that was a wrong one. Between Kings-

ton and our destination there is a deep sandy flat, overgrown with brush and penetrated in all directions with labyrinthine lanes. Into this we had wandered in our quarrels, and neither of us knew where we were. The sand was loose; our miserable beast was above his fetlocks in it, and was visibly drooping under his efforts to drag us along even at a walk.

The sun went down. The tropic twilight is short. The evening star shone out in the west, and the crescent moon over our heads. My man said this and said that; every word was a lie, for he had lost his way and would not allow it. We saw a light through some trees. I sent him to inquire. We were directed one way and another way, every way except the right one. We emerged at last upon a hard road of some kind. The stars told me the general direction. We came to cottages where the name of Cherry Garden was known, and we were told that it was two miles off; but alas! again there were two roads to it,—a short and good one and a long and bad one, and they sent us by the last. There was a steep hill to climb, for the house is eight hundred feet above the sea. The horse could hardly crawl, and my “nigger” went to work to flog him to let off his own ill-humor. I had to stop that by force, and at last, as it grew too dark to see the road under the trees, I got out and walked, leaving him to follow at a foot’s pace. The night was lovely. I began to think that we should have to camp out after all, and that it would be no great hardship.

It was like the gloaming of a June night in England, the daylight in the open spots not entirely gone, and mixing softly with the light of moon and planet and the flashing of the fireflies. I plodded on, mile after mile, and Cherry Garden still receded to one mile farther. We came to a gate of some consequence. The outline of a large mansion

was visible, with gardens round it. I concluded that we had arrived, and was feeling for the latch when the forms of a lady and gentleman appeared against the sky who were strolling in the grounds. They directed me still upward, with the mile which never diminished still to be travelled.

Like myself, our weary animal had gathered hopes from the sight of the gate. He had again to drag on as he could. His owner was subdued and silent, and obeyed whatever order I gave him. The trees now closed over us so thick that I could see nothing. Vainly I repented of my unnecessary philanthropy, which had been the cause of the mischief; what had I to do with black women, or white either, for that matter? I had to feel the way with my feet and a stick. I came to a place where the lane again divided. I tried the nearest turn. I found a trench across it three feet deep, which had been cut by a torrent. This was altogether beyond the capacity of our unfortunate animal, so I took the other boldly, prepared, if it proved wrong, to bivouac till morning with my "nigger," and go on with my argument.

Happily there was no need; we came again on a gate which led into a field. There was a drive across it and wire fences. Finally lights began to glimmer and dogs to bark: we were at the real Cherry Garden at last, and found the whole household alarmed for what had become of us.

I could not punish my misleader by stinting his fare, for I knew that I had only myself to blame. He was an honest fellow after all. In the disturbance of my mind I left a rather valuable umbrella in his buggy. He discovered it after he had gone, and had grace enough to see that it was returned to me. My entertainers were much amused at the cause of the misadventure, perhaps unique

of its kind: to address homilies to the black people on the treatment of their wives not being the fashion in those parts.

THE HIGH WOODS OF TRINIDAD.

CHARLES KINGSLEY.

[The skilled and popular novelist to whom we owe our present selection seems to have entertained for years a vivid wish to see the glory of the tropics, the achievement of which desire is put upon record in "At Last," the work from which we quote. In his "Westward Ho" he had years before given a warmly-delineated imaginary picture of the tropics, but waited for years afterwards to see these scenes in their picturesque reality. He tells well the story of the tropical "High Woods."]

AND now we set ourselves to walk to the depot, where the government timber was being felled, and the real "High Woods" to be seen at last. Our path lay along the half-finished tramway, through the first cacao plantation I had ever seen, though, I am happy to say, not the last by many a one.

Imagine an orchard of nut-trees, with very large, long leaves. Each tree is trained to a single stem. Among them, especially near the path, grow plants of the common hot-house *Datura*, its long white flowers perfuming all the air. They have been planted as landmarks, to prevent the young cacao-trees being cut over when the weeds are cleared. Among them, too, at some twenty yards apart, are the stems of a tree looking much like an ash, save that it is inclined to throw out broad spurs like a *ceiba*. You look up and see that they are *Bois immortelles*, fifty or sixty feet high, one blaze of vermilion against the blue sky.

Those who have stood under a Lombardy poplar in early spring and looked up at its buds and twigs showing like pink coral against the blue sky, and have felt the beauty of the sight, can imagine faintly—but only faintly—the beauty of these “*madres de cacao*,”—cacao mothers, as they call them here,—because their shade is supposed to shelter the cacao-trees, while the dew collected by their leaves keeps the ground below always damp.

I turned my dazzled eyes down again and looked into the delicious darkness under the bushes. The ground was brown with fallen leaves, or green with ferns; and here and there a slant ray of sunlight pierced through the shade, and flashed on the brown leaves, and on a gray stem, and on a crimson jewel which hung on the stem, and there, again, on a bright orange one; and as my eye became accustomed to the darkness, I saw that the stems and larger boughs far away into the wood were dotted with pods, crimson, or yellow, or green, of the size and shape of a small hand closed with the fingers straight out. They were the cacao-pods, full of what are called at home cacao-nibs. And there lay: heap of them, looking like a heap of gay flowers; and by them sat their brown owner, picking them to pieces and laying the seeds to dry on a cloth. I went up and told him that I came from England, and never saw cacao before, though I had been eating and drinking it all my life; at which news he grinned amusement till his white teeth and eyeballs made a light in that dark place, and offered me a fresh broken pod, that I might taste the pink sour sweet pulp in which the rows of the nibs lie packed, a pulp which I found very pleasant and refreshing.

He dries his cacao-nibs in the sun, and, if he be a well-to-do and careful man, on a stage with wheels, which can be run into a little shed on the slightest shower of rain;

picks them over and over, separating the better quality from the worse; and at last sends them down on mule-back to the sea, to be sold in London as Trinidad cocoa, or perhaps in Paris to the chocolate-makers, who convert them into chocolate, "Menier" or other, by mixing them with sugar and vanilla—both, possibly—from this very island. This latter fact once inspired an adventurous German with the thought that he could make chocolate in Trinidad just as well as in Paris. And (so goes the story) he succeeded; but the fair Creoles would not buy it. It could not be good; it could not be the real article, unless it had crossed the Atlantic twice to and fro from that centre of fashion, Paris. So the manufacture, which might have added greatly to the wealth of Trinidad, was given up, and the ladies of the island eat naught but French chocolate, costing, it is said, nearly four times as much as home-made chocolate need cost.

As we walked on through the trace (for the tramway here was still unfinished), one of my kind companions pointed out a little plant, which bears in the island the ominous name of the Brinvilliers. It is one of those deadly poisons too common in the bush, and too well known to the negro Obi-men and Obi-women. And as I looked at the insignificant weed, I wondered how the name of that wretched woman should have spread to this remote island, and have become famous enough to be applied to a plant. French negroes may have brought the name with them; but then arose another wonder. How were the terrible properties of the plant discovered? How eager and ingenious must the human mind be about the devil's work, and what long practice—considering its usual slowness and dullness—must it have had at the said work, ever to have picked out this paltry thing among the thousand weeds of the forest as a tool for its jealousy and revenge!

It may have taken ages to discover the Brinvilliers, and ages more to make its poison generally known. Why not? As the Spaniards say, "The devil knows many things, because he is old." Surely this is one of the many facts which point towards some immensely ancient civilization in the tropics, and a civilization which may have had its ugly vices and have been destroyed thereby.

Now we left the cacao grove; and I was aware on each side of the trace of a wall of green, such as I had never seen before on earth, not even in my dreams,—strange colossal shapes towering up a hundred feet and more in height, which, alas! it was impossible to reach, for on either side of the trace were fifty yards of half-cleared ground, fallen logs, withes, huge stumps ten feet high, charred and crumbling, and among them and over them a wilderness of creepers and shrubs, and all the luxuriant young growth of the "rastrajo," which springs up at once whenever the primeval forest is cleared,—all utterly impassable. These rastrajo forms, of course, were all new to me. I might have spent weeks in botanizing merely at them; but all I could remark, or cared to remark, there as in other places, was the tendency in the rastrajo towards growing enormous rounded leaves. How to get at the giants behind was the only question for one who for forty years had been longing for one peep at Flora's fairy palace, and saw its portals open at last. There was a deep gully before us, where a gang of convicts was working at a wooden bridge for the tramway, amid the usual abysmal mud of the tropic wet season, and on the other side of it there was no rastrajo right and left of the trace. I hurried down it like any school-boy, dashing through mud and water, hopping from log to log, regardless of warnings and offers of help from good-natured negroes, who expected the respectable elderly "buccra" to come to grief, struggled

perspiring up the other side of the gully, and then dashed away to the left, and stopped short, breathless with awe, in the primeval forest at last.

In the primeval forest, looking upon that upon which my teachers and masters, Humboldt, Spix, Martius, Schomburgk, Waterton, Bates, Wallace, Gosse, and the rest, had looked already, with far wiser eyes than mine, comprehending somewhat at least of its wonders, while I could only stare in ignorance. There was actually, then, such a sight to be seen on earth, and it was not less, but far more, wonderful than they had said.

My first feeling on entering the high woods was helplessness, confusion, awe, all but terror. One is afraid at first to venture in fifty yards. Without a compass, or the landmark of some opening to or from which he can look, a man must be lost in the first ten minutes, such a sameness is there in the infinite variety. That sameness and variety make it impossible to give any general sketch of the forest. Once inside "you cannot see the wood for the trees." You can only wander on as far as you dare, letting each object impress itself on your mind as it may, and carrying away a confused recollection of innumerable perpendicular lines all straining upward, in fierce competition, towards the light-food far above; and next of a green cloud, or rather mist, which hovers round your head, and rises thickening to an unknown height. The upward lines are of every possible thickness, and of almost every possible hue; what leaves they bear, being for most part on the tips of the twigs, give a scattered, mist-like appearance to the under foliage.

For the first moment, therefore, the forest seems more open than an English wood. But try to walk through it, and ten steps undeceive you. Around your knees are probably Mamures, with creeping stems and fan-shaped leaves,

something like those of a young cocoa-nut-palm. You try to brush through them, and are caught up instantly by a string or wire belonging to some other plant. You look up and round, and then you find that the air is full of wires,—that you are hung up in a net-work of fine branches belonging to half a dozen different sorts of young trees, and intertwined with as many different species of slender creepers. You thought at your first glance among the tree-stems that you were looking through open air; you find that you are looking through a labyrinth of wire rigging, and must use the cutlass right and left at every five steps.

You push on into a bed of strong sedge-like *Sclerias*, with cutting edges to their leaves. It is well for you they are only three and not six feet high. In the midst of them you run against a horizontal stick, triangular, rounded, smooth, green. You take a glance along it right and left, and see no end to it either way, but gradually discover that it is the leaf-stalk of a young Cocorite palm. The leaf is five-and-twenty feet long, and springs from a huge ostrich plume, which is sprawling out of the ground and up above your head a few yards off. You cut the leaf-stalk through right and left and walk on, to be stopped suddenly (for you get so confused by the multitude of objects that you never see anything till you run against it) by a gray lichen-covered bar as thick as your ankle. You follow it up with your eye, and find it entwine itself with three or four other bars, and roll over with them in great knots, and festoons, and loops twenty feet high, and then go up with them into the green cloud over your head, and vanish, as if a giant had thrown a ship's cable into the tree-tops.

One of them, so grand that its form strikes even the negro and the Indian, is a *Liantasse*. You see that at once by the form of its cable,—six or eight inches across in

one direction, and three or four in another, furlbelowed all down the middle into regular knots, and looking like a chain cable between two flexible bars. At another of the loops, about as thick as your arm, your companion, if you have a forester with you, will spring joyfully. With a few blows of his cutlass he will sever it as high up as he can reach, and again below, some three feet down; and, while you are wondering at this seemingly wanton destruction, he lifts the bar on high, throws his head back, and pours down his thirsty throat a pint or more of pure cold water. This hidden treasure is, strange as it may seem, the ascending sap, or rather the ascending pure rain-water which has been taken up by the roots, and is hurrying aloft, to be elaborated into sap, and leaf, and flower, and fruit, and fresh tissue for the very stem up which it originally climbed, and therefore it is that the woodman cuts the water-vine through first at the top of the piece which he wants, and not at the bottom; for so rapid is the ascent of the sap, that if he cut the stem below, the water would have all fled upward before he could cut it off above.

Meanwhile, the old story of Jack and the Bean-stalk comes into your mind. In such a forest was the old dame's hut, and up such a bean-stalk Jack climbed, to fight a giant and a castle high above. Why not? What may not be up there? You look up into the green cloud, and long for a moment to be a monkey. There may be monkeys up there over your head,—burly red Howler, or tiny peevish Sapajou, peering down at you, but you cannot peer up at them. The monkeys, and the parrots, and the humming-birds, and the flowers, and all the beauty, are upstairs—up above the green cloud. You are in "the empty nave of the cathedral," and the service is being celebrated aloft in the blazing roof.

We will hope that, as you look up, you have not been careless enough to walk on, for if you have you will be tripped up at once; nor to put your hand out incautiously to rest it against a tree, or what not, for fear of sharp thorns, ants, and wasp-nests. If you are all safe, your next steps, probably, as you struggle through the bush between tree-trunks of every possible size, will bring you face to face with huge upright walls of seeming boards, whose rounded edges slope upward till, as your eye follows them, you find them enter an enormous stem, perhaps round, like one of the Norman pillars of Durham nave, and just as huge; perhaps fluted, like one of William of Wykeham's columns at Winchester.

There is the stem, but where is the tree? Above the green cloud. You struggle up to it between two of the board walls, but find it not so easy to reach. Between you and it are half a dozen tough strings which you had not noticed at first,—the eye cannot focus itself rapidly enough in this confusion of distances,—which have to be cut through ere you can pass. Some of them are rooted in the ground, straight and tense; some of them dangle and wave in the wind at every height. What are they? Air-roots of wild pines, or of Matapalos, or of figs, or of Seguines, or of some other parasite? Probably; but you cannot see. All you can see is, as you put your chin close against the trunk of the tree and look up, as if you were looking up against the side of a great ship set on end, that some sixty or eighty feet up in the green cloud arms as big as English forest-trees branch off, and that out of their forks a whole green garden of vegetation has tumbled down twenty or thirty feet, and half climbed up again.

You scramble round the tree to find whence this aërial garden has sprung: you cannot tell. The tree-trunk is

smooth and free from climbers, and that mass of verdure may belong possibly to the very cables which you met ascending into the green cloud twenty or thirty yards back, or to that impenetrable tangle a dozen yards on, which has climbed a small tree, and then a taller one again, and then a taller still, till it has climbed out of sight, and possibly into the lower branches of the big tree. And what are their species? What are their families? Who knows? Not even the most experienced woodman or botanist can tell you the names of plants of which he only sees the stems. The leaves, the flowers, the fruit, can only be examined by felling the tree; and not even always then, for sometimes the tree, when cut, refuses to fall, linked as it is by chains of liane to all the trees around. Even that wonderful water-vine which we cut through just now may be one of three or even four different plants. . . .

And where are the famous Orchids? They perch on every bough and stem; but they are not, with three or four exceptions, in flower in the winter; and if they were, I know nothing about them; at least I know enough to know how little I know. Whosoever has read Darwin's "Fertilization of Orchids," and finds in his own reason that the book is true, had best say nothing about the beautiful monsters till he has seen with his own eyes more than his master.

And yet even the three or four that are in flower are worth going many a mile to see. In the hot-house they seem almost artificial from their strangeness; but to see them "natural," on natural boughs, gives a sense of their reality which no unnatural situation can give. Even to look up at them perched on bough and stem, as one rides by, and to guess what exquisite and fantastic form may issue, in a few months or weeks, out of those fleshy, often unsightly, leaves, is a strange pleasure,—a spur to the

fancy which is surely wholesome, if we will but believe that all these things were invented by a Fancy, which desires to call out in us, by contemplating them, such small fancy as we possess, and to make us poets, each according to his power, by showing a world in which, if rightly looked at, all is poetry.

Another fact will soon force itself on your attention, unless you wish to tumble down and get wet up to your knees. The soil is furrowed everywhere by holes, by graves some two or three feet wide and deep, and of uncertain length and shape, often wandering about for thirty or forty feet, and running confusedly into each other. They are not the work of man, nor of an animal, for no earth seems to have been thrown out of them. In the bottom of the dry graves you sometimes see a decaying root; but most of them just now are full of water, and of tiny fish also, which burrow in the mud, and sleep during the dry season, to come out and swim during the wet. These graves are, some of them, plainly quite new. Some, again, are very old, for trees of all sizes are growing in them and over them.

What makes them? A question not easily answered. But the shrewdest foresters say that they have held the roots of trees now dead. Either the tree has fallen, and torn its roots out of the ground, or the roots and stumps have rotted in their place, and the soil above them has fallen in.

But they must decay very quickly, these roots, to leave their quiet fresh graves thus empty; and—now one thinks of it—how few fallen trees, or even dead sticks, there are about. An English wood, if left to itself, would be cumbered with fallen timber; and one has heard of forests in North America through which it is all but impossible to make way, so high are piled up, among the still growing

trees, dead logs in every stage of decay. Such a sight may be seen in Europe among the high silver-fir forests of the Pyrenees. How is it not so here? How, indeed? And how comes it—if you will look again—that there are few or no fallen leaves, and actually no leaf-mould? In an English wood there would be a foot—perhaps two feet—of black soil, renewed by every autumn leaf-fall. Two feet? One has heard often enough of bison-hunting in Himalayan forests among Deodaras one hundred and fifty feet high, and scarlet rhododendrons thirty feet high, growing in fifteen or twenty feet of leaf- and timber-mould. And here, in a forest equally ancient, every plant is growing out of the bare yellow loam as it might in a well-hoed garden-bed. Is it not strange?

Most strange, till you remember where you are,—in one of Nature's hottest and dampest laboratories. Nearly eighty inches of yearly rain and more than eighty degrees of perpetual heat make swift work with vegetable fibre, which, in our cold and sluggard clime, would curdle into leaf-mould, perhaps into peat. Far to the north, in poor old Ireland, and far to the south, in Patagonia, begin the zones of peat, where dead vegetable fibre, its treasures of light and heat locked up, lies all but useless age after age. But this is the zone of illimitable sun force, which destroys as swiftly as it generates, and generates again as swiftly as it destroys. Here, when the forest giant falls, as some tell me that they have heard him fall, on silent nights, when the cracking of the roots below and the lianes aloft rattles like musketry through the woods, till the great trunk comes down, with a boom as of a heavy gun, re-echoing on from mountain-side to mountain-side; then

“Nothing in him that doth fade,
But doth suffer an *air-change*
Into something rich and strange.”

Under the genial rain and genial heat, the timber-tree itself, all its tangled ruin of lianes and parasites, and the boughs and leaves, snapped off not only by the blow, but by the very wind of the falling tree, all melt away swiftly and peacefully in a few months—say almost a few days—into the water, and carbonic acid, and sunlight out of which they were created at first, to be absorbed instantly by the green leaves around, and, transmuted into fresh forms of beauty, leave not a wrack behind. Explained thus,—and this I believe to be the true explanation,—the absence of leaf-mould is one of the grandest, as it is one of the most startling, phenomena of the forest.

[And thus the writer rambles on, telling fresh marvels of the tropic woods, from which a knowledge is attained that “defies all analysis.”]

[It is that of] the causes and effects of their beauty; that “æsthetic” of plants, of which Schleiden has spoken so well in that charming book of his, “The Plant,” which all should read who wish to know somewhat of “The Open Secret.” But when they read it let them read with open hearts. For that same “Open Secret” is, I suspect, one of those which God may hide from the wise and prudent, and yet reveal to babes.

At least, so it seemed to me, the first day that I went, awe-struck, into the High Woods; and so it seemed to me, the last day that I came, even more awe-struck, out of them.

ANIMALS OF BRITISH GUIANA.

C. BARRINGTON BROWN.

[British Guiana, the land which seems so strongly inclined to extend its borders at the expense of Venezuela, is as yet very far from being the active and well-developed settlement which might be imagined from the aggressiveness of its rulers. Mr. Brown's story of it indicates a land of which nature is still largely the lord, and which is so little known that he, as late as twenty years ago, was able to discover a river and a cataract not previously heard of. The selection we append, descriptive of the wild animals of the country, is significant of an undeveloped land. Mr. Brown, in his "Canoe and Camp Life in British Guiana," describes a number of unsuccessful efforts to shoot jaguars, and continues:]

ONE of the men happened to go a few yards behind one of our camping-places, when he heard a movement behind him; turning round he saw a jaguar leisurely surveying him. He fled to the camp with his story, and I went in search of the animal accompanied by one man armed with a cutlass. We did not go far before we saw its tracks in the sandy bed of a dry water-course, and concluded that it had gone off. We gave up all hopes of seeing it, and, turning round, were on the point of making our way back to camp, when my companion suddenly exclaimed, "Look! look! the tiger!" Glancing at the spot indicated I saw it crouching in a thicket with its head bent down, its body swaying from side to side, glaring at us with eyes of a greenish metallic hue. The brute had evidently been following us whilst we were searching for it, and was working itself into a rage. I took as good aim at its head as I could, and fired; but instead of seeing it lying dead, I

heard it bounding and crashing through the forest at a fearful pace.

One of my men got a shot at a jaguar on a sand-beach, where it passed within twenty feet of him, as he crouched on some rocks. The only effect the shot had on the animal was to make it gallop away a few yards, then turn for an instant and look at him. The men whom I left in charge on the New River cut open a hollow log containing young accouries, and took them out. Their squeals on being seized attracted a puma, which ran close up to the men, apparently wishing to get the accouries, when one of them fired at it and it made off.

One evening, whilst returning to camp along the portage path that we were cutting at Wonobobo Falls, I walked faster than the men, and got some two hundred yards in advance. As I rose the slope of an uneven piece of ground, I saw a large puma (*Felis concolor*) advancing along the other side of the rise towards me, with its nose down on the ground. The moment I saw it I stopped; and at the same instant it tossed up its head, and seeing me also came to a stand. With its body half crouched, its head erect, and its eyes round and black, from its pupils having expanded in the dusky light, it looked at once a noble and appalling sight. I glanced back along our wide path to see if any of my men were coming, as at the moment I felt that it was not well to be alone without some weapon of defence, and I knew that one of them had a gun; but nothing could I see. As long as I did not move the puma remained motionless also, and thus we stood some fifteen yards apart, eying each other curiously. I had heard that the human voice is potent in scaring most wild beasts, and feeling that the time had arrived to do something desperate, I waved my arms in the air and shouted loudly. The effect on the tiger was electrical; it turned quickly on

one side, and in two bounds was lost in the forest. I waited until my men came up, however, before passing the place at which it disappeared in case it might only be lying in ambush there; but we saw nothing more of it.

When returning down the portage and dragging our boats over, we saw a jaguar sitting on a log near the same spot, watching our movements with evident curiosity, and although the men were singing as they hauled the boats along, it did not seem to mind the noise. As soon as it saw that it was observed, it jumped off the log, and with a low growl made off. From this I infer that the flight of my puma must have been owing more to the windmill-like motion of my arms than to my voice.

During our journey across from the New River to the Essequibo, we were cooking breakfast one morning, when we heard a tremendous rushing and crashing noise coming towards us through the forest, and then caught a glimpse of an accourie flying for dear life before a black tiger. Just after they passed the accourie gave a heart-rending scream as the tiger seized it, but on my men rushing up to the spot, the tiger left its prey and fled. When picked up the accourie was quite dead, but on examination showed no marks whatever of the tiger's teeth. The tiger had evidently killed it by springing upon it with its legs close together, the weight of its body giving such a blow that the accourie's life was fairly knocked out. The men found its dead body just beyond a large log, slightly raised from the ground, under which it had bolted and lost some headway, while the cunning tiger took the log in its stride and so came, as it intended, on the poor accourie's back, with the result we have seen.

On returning to the head of the New River for provisions, we were followed for many miles by a tiger, for on going back we saw its huge tracks in the swampy places on our path.

With good hunting-dogs fine jaguar- and puma-hunting might be obtained on the banks of this river, where without doubt they are exceedingly numerous. Many of the Indian hunting-dogs trained for deer or tapir will hunt tigers. When on the track of either of these animals, should they come across the scent of a tiger, their eager and confident manner of pressing on after the game is immediately changed, and with hair on their backs erect they became cautious and nervous to a degree, jumping at even the snapping of a twig. Abandoning the hunt they take up the tiger's track and follow it. But should the huntsman call them from it, or not cheer them on with his voice from time to time, they exhibit great fear, and keeping close to his heels cannot be induced to hunt any more in that district for the day. On the contrary, if allowed to follow the tiger, they track it up with caution, being fully aware of the cunning dodge practised by that animal, which is, when the dog is close at hand, to spring to one side and lie in ambush till it passes, when with one spring the dog is seized.

Ordinary dogs would fall a prey to this trap, but not the self-taught tiger dogs. Their fine powers of scent warn them of their near approach to the quarry, when they advance with great caution, never failing to detect the tiger in time, and when once their eye is upon their enemy it has no chance to escape. In its pride of strength, the jaguar scorns the dogs, and with a rush like a ball from a cannon springs madly at one of them, feeling sure that it cannot escape. It has reckoned, however, without its host, for the dog eludes the spring with ease, and with great quickness flies on the tiger's flank, giving it a severe nip. As the tiger turns with a growl of pain and disappointment, the dog is off to a little distance, yelping lustily and never remaining still an instant, but darting first on one

side and then on the other. After one or two ineffectual charges the tiger gives it up, and on the approach of the hunter, springs into the nearest suitable tree, which it seldom leaves alive.

[The Indians describe several kinds of tigers and tiger-cats, each of which hunts one kind of animal in particular, whose call it can imitate. The deer-tiger is the puma. The wailah, or tapir-tiger, is pure black and of great size.]

The Corentyne and its branches were literally teeming with fish of various kinds, the greater number being haimara and perai. The latter were so abundant and ferocious that at times it was dangerous, when bathing, to go into the water at a greater depth than up to one's knees. Even then small bodies of these hungry creatures would swim in and make a dash close up to our legs, and then retreat to a short distance. They actually bit the steering paddles as they were drawn through the water astern of the boats. A tapir which I shot swimming across the river had its nose eaten off by them whilst we were towing it to the shore.

Of an evening the men used to catch some of them for sport, and in taking the hook from their mouths produce a wound from which the blood ran freely. On throwing them back into the water in this injured condition they were immediately set upon and devoured by their companions. Even as one was being hauled in on the line, its comrades, seeing that it was in difficulties, attacked it at once. One day, when the boat was hauled into some rocks, a few of the men were engaged shooting fish near by, and in so doing wounded a large haimara. Having escaped from its human tormentors, it made for the open river, but was instantly attacked by perai attracted by the blood escaping from its wound, and was driven back to the shelter of the rocks close to the boat, from which I had a good

view of the chase. The large fish followed by its savage enemies reminded me of a parallel case on land,—a stricken deer pursued by wolves.

The perai, fortunately, lie only off sand-beaches and in quiet pools, not frequenting the cataracts, where their presence would be anything but acceptable to the men when working in the water. I was fortunate enough to find the spawning-place of some perai on the matted clusters of fibrous roots of some lianes, which hung from the branches of a tree into the water, among which much earthy sediment had collected and many small aquatic plants had grown. The sediment gave weight to the roots, which kept the clusters under water, and the force of the current made them buoyant, giving the lianes a slope when the river was high, which kept them not far from its surface. My attention was attracted to them by two perai lying close to them, with their heads up-stream, as the men said, engaged in watching their eggs. Procuring one of the roots I examined it, and found among it numbers of single eggs and clusters of small jelly-like young, which had been already hatched. The eggs were white and about one-eighth of an inch in diameter, with a hard exterior. The young were very little larger, and had a glutinous surface, which caused them to adhere together on being taken from the water. They had not acquired any powers of locomotion, but could just wriggle their tails like tadpoles. Under a lens they resembled the egg devoid of its covering, with a gelatinous ridge around three-quarters of its circumference, one of which expanded into a knob (probably the head), while the other termination was flattened and tail-like. I could not detect any eyes or mouth in them, but their bodies were speckled with gray markings of coloring matter. . . .

In hauling the boats up the shallow rapids near the

mouth of the Cutari the men, whilst wading, were frequently struck by conger eels. Every now and then a man would call out "Congler, conglar," and jumping into the boat rub his shins, which had been benumbed by a touch from one of these fish. After half a minute or so the numbness wore off and he took to the water again. The boat being in a critical condition at the time, it was impossible for the men to leave the water. They had therefore to brave out the shocks from these batteries, which must have been very slight, given probably by small eels, or they could not have stood them.

Small long-bodied fish were very common, and one kind, called courami, took the baited hook as long as the fisherman who threw the line was out of sight.

The lukenaine, or sunfish, was captured by my men in a singular manner. They manufactured an exceedingly rude fly out of a bunch of silk-grass (*Bromelia karatas*) fibre, and attached it to a large hook with a short line and rod. Drawing it rapidly over pools among the rocks it was immediately taken by the lukenaine, as the artificial fly is struck by the trout.

Sting-rays were frequently seen on the sandy bottom or grovelling for worms in the muddy banks under water. My interpreter, William, was unfortunate enough to step upon one, which, being of the color of the bottom, was not observed. It drove its spine or sting into the side of his instep, producing a jagged wound which bled profusely. I immediately put laudanum on the wound and gave him a strong dose of ammonia. In a quarter of an hour after he was writhing on the ground in great agony, actually screaming at times with the pain he felt in the wounded part, in his groin, and under one armpit. His foot and leg were so cold that he got one man to light a fire and support his foot over it, persisting in trying to put it in the

flames. I gave him two doses of laudanum, one shortly after the other, without relieving his sufferings in the slightest degree. After three hours of intense pain he became easier, but had returns of it at intervals during the night. For a week he was unable to put his foot on the ground, and the wound did not heal thoroughly for six weeks. . . .

We did not see a single cayman during our stay on the Corentyne. It may safely be inferred that there are none on that river, a singular fact that cannot be accounted for. Small alligators, of about four feet in length, are numerous, however, and one of them one night carried off a young cat which the men had brought from Georgetown. Poor puss had gone to the water's edge to drink, when the alligator with one blow of its tail swept it into the water and carried it away. On the following morning we saw the alligator with its snout resting on a rock near by, so I shot it; the men dragging it out of the water and leaving it on the rocks. On returning, some months afterwards, we camped at the same place, and there among the bones of the alligator saw those of the cat bleaching in the sun.

Iguanas were numerous, and on one occasion, when one in a tree overhead was shot at with an arrow, it jumped down to gain the water, but not calculating its distance accurately, landed on the back of one of the men, who, seeing it coming, ducked his head and dropped his paddle overboard. The paddle, being made of paruru, or paddewood, was heavy, and sank, and the man was afraid to dive for it among the numerous perai.

[The author proceeds to describe the birds and trees of the region, ending with an interesting account of the Brazil-nut.]

Upon the borders of the New River and main Corentyne, above the last-mentioned fall, we met with large

groves of Brazil-nut-trees, and on the ground beneath them obtained numbers of their nuts. I was fortunate to find some of the nut-cases containing nuts that had commenced to germinate, each nut sending out long roots from one end and young plants from the other. The roots were all twisted and matted together, quite filling up the cavities in the case around the nuts; yet the nut-case was hard and showed no signs of decay, so that it is difficult to say how the young plants free themselves. There is a small aperture where the fruit-stalk was once attached, but in only one instance did I find a case in which one of the young plants had found its way out through this and sent forth leaves. It seems to me that when this happens one plant alone survives of the twelve or fifteen that commenced to grow, and that its matted roots, gradually filling the nut-case, eventually burst it, when the plant is free to take root in the earth. The strong cover of the growing nut is necessary protection to the young plant, for without such it would be devoured by one of the host of animals that are ready to eat it.

I planted some of the sprouting nuts, cut out of their hard outer covering, on my way up the river, but on returning found that they had all been dug up and eaten by rats and other small vermin. I therefore had a lot planted in a box at our camp above King Frederick William IV. Fall on my first return to that spot, and placed on the stem of a small tree cut off some five feet from the ground. In this position they were free from the attacks of small animals, and, being covered with a shelter of some palm-leaves, thrived wonderfully. These plants were subsequently sent to Kew, where they arrived in a fine healthy condition.

We found many nut-cases with holes cut in them by accouries, the marks of the gnawing teeth of those animals being plainly shown. My men used to open them by

chopping off their ends with a cutlass, which, owing to their hardness, was no easy operation. The quatas, or large black spider-monkeys, spent a good deal of their time in trying to open them by beating them against the branches of trees or on hard logs upon the ground; and as we passed a grove of Brazil-nut-trees it was amusing to hear the hammering sounds produced by these fellows at their self-imposed tasks. Where a single monkey was thus employed the blows were most laughably "few and far between," the creature showing its true indolent character by the slow way in which it performed its work, resting for a few minutes between every blow. It also showed an amount of perseverance, however, that one would not look for in a monkey, and a knowledge that it would eventually reap a reward for its hard labor.

Goodness knows how long it takes one of these monkeys to break a nut-case; but the time must be great, for on one occasion, during our journey from the New River to the upper Essequibo, we got quietly among a lot of the nut-breakers, and secured a nut-case which one in its hurry had left upon a log, and which was worn smooth by the friction of the monkey's hands. This had evidently been pounded for a length of time, but showed no signs of cracking. Its natural aperture was large enough to allow the monkey's fingers to touch the ends of the nuts inside, which were picked and worn by its nails. Near the same place we saw a nut-case split in two, on the flat surface of a large granite rock, that had evidently been broken by a monkey, for there were no Brazil-nut-trees, from which it could have fallen, overhanging the spot.

The blossoms of the Brazil-nut-tree are large and yellow, having a delicate aromatic perfume. They are similar, but larger than the caccarali, or monkey-pot-tree (*Lecythis ollaria*), whose flowers are so powerfully scented.

LIFE AND SCENERY IN VENEZUELA.

ALEXANDER VON HUMBOLDT.

[The illustrious traveller and scientist from whose picturesque descriptions of life and scenery in South America we here quote was born in Berlin, September 14, 1769. After a careful university education and scientific labors in Europe, he set sail for America in 1799, and during the succeeding five years explored a great extent of territory within the areas of the present states of Venezuela, Colombia, Ecuador, Peru, and Mexico. For twenty-five years succeeding his return he was employed in arranging his collections, publishing the results of his observations, and in other scientific labors. In 1829 he again became a traveller, and explored a wide district in Asia. He died, in his ninetieth year, May 6, 1859. Few men have ever done so much for the advancement of science, while his published works of travel contain much that is of value from a literary point of view. We extract a series of interesting passages relating to scenery and incidents in the Orinoco region. The first is descriptive of the remarkable "cow-tree."]

WHEN incisions are made in the trunk of this tree, it yields abundance of a glutinous milk, tolerably thick, devoid of all acridity, and of an agreeable and balmy smell. It was offered to us in the shell of a calabash. We drank considerable quantities of it in the evening before we went to bed, and very early in the morning, without feeling the least injurious effect. The glutinous character of this milk alone renders it a little disagreeable. The negroes and the free people who work in the plantations drink it, dipping into it their bread of maize or cassava. The overseer of the farm told us that the negroes grow sensibly fatter during the season when the *palo de vaca* furnishes them with most milk. The juice, exposed to the air, presents at its surface membranes of a strongly

animalized substance, yellowish, stringy, and resembling cheese.

Amidst the great number of curious phenomena which I have observed in the course of my travels, I confess there are few that have made so powerful an impression on me as the aspect of the cow-tree. Whatever relates to milk or to corn inspires an interest which is not merely that of the physical knowledge of things, but is connected with another order of ideas and sentiments. We can scarcely conceive how the human race could exist without farinaceous substances, and without that nourishing juice which the breast of the mother contains, and which is appropriated to the long feebleness of the infant. The amylaceous matter of corn, the object of religious veneration among so many nations, ancient and modern, is diffused in the seeds and deposited in the roots of vegetables; milk, which serves as an aliment, appears to us exclusively the produce of animal organization. Such are the impressions we have received in our earliest infancy; such is also the source of that astonishment created by the aspect of the tree just described. It is not here the solemn shades of forests, the majestic course of rivers, the mountains wrapped in eternal snow, that excite our emotion. A few drops of vegetable juice recall to our minds all the powerfulness and the fecundity of nature. On the barren flank of a rock grows a tree with coriaceous and dry leaves. Its large woody roots can scarcely penetrate into the stone. For several months of the year not a single shower moistens its foliage. Its branches appear dead and dried; but when the trunk is pierced there flows from it a sweet and nourishing milk. It is at the rising of the sun that this vegetable fountain is most abundant. The negroes and natives are then seen hastening from all quarters, furnished with large bowls to receive the milk, which grows yellow and thickens at its

surface. Some empty their bowls under the tree itself, others carry the juice home to their children.

[The great plains of Venezuela are thus described:]

The sun was almost at its zenith; the earth, wherever it appeared sterile and destitute of vegetation, was at the temperature of 120°. Not a breath of air was felt at the height at which we were on our mules; yet, in the midst of this apparent calm, whirls of dust incessantly arose, driven on by those small currents of air which glide only over the surface of the ground, and are occasioned by the difference of temperature between the naked sand and the spots covered with grass. All around us the plains seemed to ascend to the sky, and the vast and profound solitude appeared like an ocean covered with sea-weed. On the horizon the earth was confounded with the sky. Through the dry mist and strata of vapor the trunks of palm-trees were seen from afar, stripped of their foliage and their verdant summits, and looking like the masts of a ship descried upon the horizon. There is something awful, as well as sad and gloomy, in the uniform aspect of these steppes. Everything seems motionless; scarcely does a small cloud, passing across the zenith, and denoting the approach of the rainy season, cast its shadow on the earth. I know not whether the first aspect of the llanos excites less astonishment than that of the chain of the Andes.

When, beneath the vertical rays of the bright and cloudless sun of the tropics, the parched sward crumbles into dust, then the indurated soil cracks and bursts as if rent asunder by some mighty earthquake. And if, at such a time, two opposite currents of air, by conflict moving in rapid gyrations, come in contact with the earth, a singular spectacle presents itself. Like funnel-shaped clouds, their apexes touching the earth, the sand rises in vapory form

through the rarefied air in the electrically-charged centre of the whirling current, sweeping on like the rushing water-spout, which strikes such terror into the heart of the mariner. A dim and sallow light gleams from the lowering sky over the dreary plain. The horizon suddenly contracts, and the heart of the traveller sinks with dismay as the wide steppe seems to close upon him on all sides. The hot and dusty earth forms a cloudy veil which shrouds the heavens from view, and increases the stifling oppression of the atmosphere, while the east wind, when it blows over the long-heated soil, instead of cooling, adds to the burning glow. Gradually, too, the pools of water, which had been protected from evaporation by the now seared foliage of the fan-palm, disappear. As in the icy north animals became torpid from cold, so here the crocodile and the boa-constrictor lie wrapt in unbroken sleep, deeply buried in the dried soil. Everywhere the drought announces death, yet everywhere the thirsty wanderer is deluded by the phantom of a moving, undulating, watery surface, created by the deceptive play of the mirage. A narrow stratum separates the ground from the distant palm-trees, which seem to hover aloft, owing to the contact of currents of air having different degrees of heat, and therefore of density. Shrouded in dark clouds of dust, and tortured by hunger and burning thirst, oxen and horses scour the plain, the one bellowing dismally, the other with outstretched necks snuffing the wind, in the endeavor to detect, by the moisture of the air, the vicinity of some pool of water not yet wholly evaporated.

The mule, more cautious and cunning, adopts another method of allaying his thirst. There is a globular and articulated plant, the *Melo-cactus*, which encloses under its prickly integument an aqueous pulp. After carefully striking away the prickles with its forefeet, the mule

cautiously ventures to apply his lips to imbibe the cooling thistle juice. But the draught from this living vegetable spring is not always unattended by danger, and these animals are often observed to have been lamed by the puncture of the cactus thorn. Even if the burning heat of day be succeeded by the cool freshness of the night, here always of equal length, the wearied ox and horse enjoy no repose. Huge bats now attack the animals during sleep, and vampire-like suck their blood; or, fastening on their backs, raise festering wounds, in which mosquitoes, hippobosces, and a host of other stinging insects burrow and nestle.

When, after a long drought, the genial season of rain arrives, the scene suddenly changes. The deep azure of the hitherto cloudless sky assumes a lighter hue. Scarcely can the dark space in the constellation of the Southern Cross be distinguished at night. The mild phosphorescence of the Magellenic clouds fades away. Like some distant mountain, a single cloud is seen rising perpendicularly on the southern horizon. Misty vapors collect and gradually overspread the heavens, while distant thunder proclaims the approach of the vivifying rain. Scarcely is the surface of the earth moistened before the teeming steppe becomes covered with a variety of grasses. Excited by the power of light, the herbaceous mimosa unfolds its dormant, drooping leaves, hailing, as it were, the rising sun in chorus with the matin song of the birds and the opening flowers of aquatic plants. Horses and oxen, buoyant with life and enjoyment, roam over and crop the plains. The luxuriant grass hides the beautifully spotted jaguar, who, lurking in safe concealment, and carefully measuring the extent of his leap, darts, like the Asiatic tiger, with a cat-like bound upon his passing prey. At times, according to the accounts of the natives, the humid clay on the banks of the morasses

is seen to rise slowly in broad flakes. Accompanied with a violent noise, as on the eruption of a small mud-volcano, the upheaved earth is hurled high into the air. Those who are familiar with the phenomenon fly from it; for a colossal water-snake, or a mailed and scaly crocodile, awakened from its trance by the first fall of rain, is about to burst from its tomb.

When the rivers bounding the plain to the south, as the Arauca, the Apure, and the Payara, gradually overflow their banks, nature compels those creatures to live as amphibious animals, which, during the first half of the year, were perishing with thirst on the waterless and dusty plain. A part of the steppe now presents the appearance of a vast inland sea. The mares retreat with their foals to the higher banks, which project, like islands, above the spreading waters. Day by day the dry surface diminishes in extent. The cattle, crowded together, and deprived of pasturage, swim for hours about the inundated plain, seeking a scanty nourishment from the flowing panicles of the grasses which rise above the lurid and bubbling waters. Many foals are drowned, many are seized by crocodiles, crushed by their serrated tails, and devoured. Horses and oxen may not unfrequently be seen which have escaped from the fury of this blood-thirsty and gigantic lizard, bearing on their legs the marks of its pointed teeth.

[A widely different scene is that of the forest region, the nocturnal noises of whose animal inhabitants are thus picturesquely described.]

Below the mission of Santa Barbara de Arichuna we passed the night as usual in the open air, on a sandy flat, on the bank of the Apure, skirted by the impenetrable forest. We had some difficulty in finding dry wood to kindle the fires with which it is here customary to surround the bivouac, as a safeguard against the attacks of the

jaguar. The air was bland and soft and the moon shone brightly. Several crocodiles approached the bank; and I have observed that fire attracts these creatures as it does our crabs and many other aquatic animals. The oars of our boats were fixed upright in the ground, to support our hammocks. Deep stillness prevailed, only broken at intervals by the blowing of the fresh-water dolphins, which are peculiar to the river net-work of the Orinoco.

After eleven o'clock such a noise began in the contiguous forest, that for the remainder of the night all sleep was impossible. The wild cries of animals rung through the woods. Among the many voices which resounded together, the Indians could only recognize those which, after short pauses, were heard singly. There was the monotonous, plaintive cry of the howling monkeys, the whining, flute-like notes of the small sapajous, the grunting murmur of the striped nocturnal ape, the fitful roar of the great tiger, the cougar, or maneless American lion, the peccary, the sloth, and a host of parrots, parraquas, and other pheasant-like birds. Whenever the tigers approached the edge of the forest, our dog, who before had barked incessantly, came howling to seek protection under the hammocks. Sometimes the cry of the tiger resounded from the branches of a tree, and was always then accompanied by the plaintive, piping tones of the apes, who were endeavoring to escape from the unwonted pursuit.

If one asks the Indians why such a continuous noise is heard on certain nights, they answer, with a smile, that "the animals are rejoicing in the beautiful moonlight, and celebrating the return of the full moon." To me the scene appeared rather to be owing to an accidental, long-continued, and gradually increasing conflict among the animals. Thus, for instance, the jaguar will pursue the peccaries and the tapirs, which, densely crowded together, burst

through the barrier of tree-like shrubs which opposes their flight. Terrified at the confusion, the monkeys on the tops of the trees join their cries with those of the larger animals. This arouses the tribes of birds who built their nests in communities, and suddenly the whole animal world is in a state of commotion. Further experience taught us that it was by no means always the festival of moonlight that disturbed the stillness of the forest; for we observed that the voices were loudest during violent storms of rain, or when the thunder echoed and the lightning flashed through the depths of the wood. The good-natured Franciscan monk who accompanied us through the cataracts of Apures and Maypures to San Carlos, on the Rio Negro, and to the Brazilian frontier, used to say, when apprehensive of a storm at night, "May heaven grant a quiet night both to us and to the wild beasts of the forest!"

[The unpleasant conditions of a canoe voyage on the Orinoco are thus described:]

The new canoe intended for us was, like all Indian boats, a trunk of a tree hollowed out partly by the hatchet and partly by fire. It was forty feet long and three broad. Three persons could not sit in it side by side. These canoes are so crank, and they require, from their instability, a cargo so equally distributed, that when you want to rise for an instant, you must warn the rowers to lean to the opposite side. Without this precaution the water would necessarily enter the side pressed down. It is difficult to form an idea of the inconveniences that are suffered in such wretched vessels. To gain something in breadth, a sort of lattice-work had been constructed on the stern with branches of trees, that extended on each side beyond the gunwale. Unfortunately, the *toldo*, or roof of leaves, that

covered this lattice-work, was so low that we were obliged to lie down, without seeing anything, or, if seated, to sit nearly double. The necessity of carrying the canoe across the rapids, and even from one river to another, and the fear of giving too much hold to the wind, by making the toldo higher, render this construction necessary for vessels that go up towards the Rio Negro. The toldo was intended to cover four persons, lying on the deck or lattice-work of brush-wood; but our legs reached far beyond it, and when it rained half our bodies were wet. Our couches consisted of ox-hides or tiger-skins spread upon branches of trees, which were painfully felt through so thin a covering. The fore part of the boat was filled with Indian rowers, furnished with paddles, three feet long, in the form of spoons. They were all naked, seated two by two, and they kept time in rowing with a surprising uniformity, singing songs of a sad and monotonous character. The small cages containing our birds and our monkeys—the number of which augmented as we advanced—were hung some to the toldo and others to the bow of the boat. This was our travelling menagerie. Every night, when we established our watch, our collection of animals and our instruments occupied the centre; around these were placed, first, our hammocks, then the hammocks of the Indians; and on the outside were the fires, which are thought indispensable against the attacks of the jaguar. About sunrise the monkeys in our cages answered the cries of the monkeys of the forest.

In a canoe not three feet wide, and so encumbered, there remained no other place for the dried plants, trunks, sextant, a dipping needle, and the meteorological instruments, than the space below the lattice-work of branches, on which we were compelled to remain stretched the greater part of the day. If we wished to take the least object out of a trunk, or to use an instrument, it was necessary to

row ashore and land. To these inconveniences were joined the torment of the mosquitoes which swarmed under the toldo, and the heat radiated from the leaves of the palm-trees, the upper surface of which was continually exposed to the solar rays. We attempted every instant, but always without success, to amend our situation. While one of us hid himself under a sheet to ward off the insects, the other insisted on having green wood lighted beneath the toldo, in the hope of driving away the mosquitoes by the smoke. The painful sensations of the eyes, and the increase of heat, already stifling, rendered both these contrivances alike impracticable. With some gayety of temper, with feelings of mutual good-will, and with a vivid taste for the majestic grandeur of these vast valleys of rivers, travellers easily support evils that become habitual.

[The torment of insects—mosquitoes and venomous flies by day, and the *zancudos* (large gnats) by night—became almost insupportable as they advanced. On the upper Orinoco the mosquitoes form the principal topic of conversation, the usual salutations being, “How did you find the gnats during the night?” or, “How are you off for mosquitoes to-day?” Humboldt thus describes the situation:]

The lower strata of air, from the surface of the ground to the height of fifteen or twenty feet, are absolutely filled with venomous insects. If in an obscure spot, for instance, in the grottos of the cataracts formed by superincumbent blocks of granite, you direct your eyes towards the opening enlightened by the sun, you see clouds of mosquitoes more or less thick. I doubt whether there be a country upon earth where man is exposed to more cruel torments in the rainy season. Having passed the fifth degree of latitude you are somewhat less stung; but on the upper Orinoco the stings are more painful, because the heat and the absolute want of wind render the air more burning and more irritating in its contact with the skin. “How com-

fortable people must be in the moon!" said a Salive Indian to Father Gumilla. "She looks so beautiful and so clear, that she must be free from mosquitoes." These words, which denote the infancy of a people, are very remarkable. The satellite of the earth appears to all savage nations the abode of the blessed, the country of abundance. The Esquimaux, who counts among his riches a plank or the trunk of a tree, thrown by the currents on a coast destitute of vegetation, sees in the moon plains covered with forests; the Indian of the forest of Orinoco there beholds open savannas, where the inhabitants are never stung by mosquitoes.

[The story of the voyage closes as follows:]

It would be difficult for me to express the satisfaction we felt on landing at Angostura [the capital of Spanish Guiana.] The inconveniences endured at sea in small vessels are trivial in comparison with those that are suffered under a burning sky, surrounded by swarms of mosquitoes, and lying stretched in a canoe, without the possibility of taking the least bodily exercise. In seventy-five days we had performed a passage of five hundred leagues—twenty to a degree—on the five great rivers, Apure, Orinoco, Atabapo, Rio Negro, and Cassiquiare; and in this vast extent we had found but a very small number of inhabited places. Coming from an almost desert country, we were struck with the bustle of the town, though it contained only six thousand inhabitants. We admired the conveniences which industry and commerce furnish to civilized man. Humble dwellings appeared to us magnificent; and every person with whom we conversed seemed to be endowed with superior intelligence. Long privations give a value to the smallest enjoyments; and I cannot express the pleasure we felt when we saw for the first time wheaten bread on the governor's table.

THE LLANEROS OF VENEZUELA.

RAMON PAEZ.

[Don Ramon Paez, in his "Wild Scenes in South America; or, Life in the Llanos of Venezuela," has given us some interesting pictures of a region little known to travellers. These vast plains are inhabited by a people many of whom bear a close resemblance in their habits to the Argentine Gauchos. The following selection is devoted to a description of this people and their region of habitation.]

WE left Ortiz as usual, very early the next morning, stumbling here and there amidst the mass of loose stones which paved the way along the winding bed of the *quebrada*. In proportion as we advanced on our route the hills decreased in size, while the loose stones seemed to increase in quantity. The splendid groves of hardy and balsamiferous trees, which near Ortiz formed an almost impenetrable forest, gradually became less imposing in appearance, until they were replaced by thickets of thorny bushes, chiefly composed of several species of mimosas, with a delicate and feathery foliage. The traveller accustomed to the shade of a luxuriant vegetation, and to the sight of cultivated valleys, is struck by the rapid diminution of the former, and the total disappearance of the latter, as he emerges from the Galeras of Ortiz; yet he is somewhat compensated by the almost overpowering perfume shed by masses of the canary-colored blossoms with which these shrubs are loaded, from the summits down to the bending branches that trail the ground at every passing breeze.

Suddenly we entered a widely-extended tract of level land almost destitute of vegetation. With the exception of a few clumps of palm-trees with fan-like leaves, nothing

but short grass covered its entire surface, almost realizing the idea of an "ocean covered with sea-weed." A dense mass of vapor pervading the atmosphere obscured the horizon, while the fan-palms, seen from afar, appeared like ships enveloped in a fog. Gradually the circle of the heavens seemed to close around us, until we became, as it were, encompassed by the sky. We were, in fact, treading the shores of the great basin of the Llanos, over one of the ancient shoals or *mesas*, which, like successive terraces, now form the border of those grassy oceans known as the Pampas. This was the Mesa de Paya, the seat of one of the cattle-farms to which we were bound.

After wandering for nearly three hours over this monotonous landscape without compass, and guided only by certain landmarks known to the *vaqueanos*, we came unexpectedly upon the borders of the Mesa, which commands an extensive view of the lower savannas. As if by magic, the dreary scene changed to one of the most glorious panoramas in existence. At our feet lay a beautiful expanse of meadow, fresh and smooth as the best cultivated lawn, with troops of horses and countless herds of cattle dispersed all over the plain. Several glittering ponds, alive with all varieties of aquatic birds, reflected upon their limpid surface the broad-leaved crowns of the fan-palms, towering above verdant groves of laurel, amyris, and elm-like *robles*. Farther beyond, and as far as the eye could reach, the undulating plain appeared like a petrified ocean after the sweeping tempest.

But I feel that my descriptions fall short of the reality, and that I am unable to depict the harmonious effects of light and shade, and the blending of the various tints of green, blue, and purple, dispersed over this extensive panorama; the towering palms gracefully fanning the glowing atmosphere with their majestic crowns of broad and

shining leaves, and myriad other beauties difficult to enumerate.

I could scarcely tear myself away from the spot, so fascinated was I with the novelty of the scene. My companions, more concerned for the speedy termination of the journey than the beautiful in nature, set off at a brisk trot towards the house, which was at no great distance. Fearing to lose my way among the intricate paths leading to it, I was compelled to follow in their wake, stopping occasionally to gaze once more upon those enchanting groves, which seemed to return me to the highly cultivated fields and green meadows of glorious "Old England," from whence I had just returned.

On descending to the plain below, my attention was attracted to an unsightly group of palm-thatched huts, looking more like huge beehives than the abode of human beings. A formidable fence of palm-trunks surrounded the premises and several acres of ground beyond. These were the *corrals*, or enclosures where the training of the fierce herds was practised by the hardy dwellers of the Llanos; but no signs of cultivation, or aught else connected with the rural occupations of the farmer, were visible in the neighborhood. Presently the cavalcade stopped before the gate, and all the individuals composing it dismounted and began to unsaddle their horses, amidst the barking of a legion of dogs and the braying of all the donkeys in the vicinity.

This was the *hato*, or cattle-farm, of San Pablo we were in quest of, famous in the annals of the civil wars in Venezuela as the occasional head-quarters of the constitutional armies, commanded by the owner of this farm. Our leader was received at the entrance of his estate by a grave and elderly negro slave, who acted as overseer, and had under his control all the men and property attached to it.

Kneeling upon the stony court-yard, he kissed the hand extended to him in friendly greeting, after which he proceeded to unsaddle his master's horse, which he led to a pond within the enclosure, where the horses were watered.

We purposed remaining a few days at San Pablo, with the object of incorporating some fresh relays of mules and horses from the abundant stock of this estate; so we of the staff installed ourselves under the palm-roof of our rustic mansion, while the rank and file of the expedition found accommodation in the open barracoons adjoining it, although none of the party had reason to boast of being better off than his neighbor.

"It is sad when pleasing first impressions are obliterated," remarks a sentimental writer; "always painful to become *desenchanté* on a more intimate acquaintance with either people or places." I soon found that I was not in the fairy-land I had imagined, abounding in grottos and refreshed by sparkling fountains, but in the region of the Llanos, where the French adage, *Chacun pour soi et Dieu pour tous*, is verified to its fullest extent. San Pablo, with its vaunted prestige, and in spite of its proximity to several important marts, was no better provided with accommodations than the untidy *douar* of the wandering Arab of the desert. A rickety table standing against the wall for fear of tumbling down, two or three clumsy cedar chairs covered with raw hide, and a couple of grass hammocks, serving the double purpose of beds and lounges, constituted all the furniture of the great farm. As a substitute for wardrobes and hat-stands, we were shown a number of deer-antlers and bull-horns embedded in the walls of reeds and mud, on which to hang our pouches, bridles, etc.

I searched in vain on our arrival for something like a bowl in which to lave my hands and face, covered with dust and parched by the broiling sun of the savannas.

Even water was so scarce that it was served to us sparingly from a large calabash gourd used in bringing it from the river, nearly a mile distant. It is true there was, within the enclosure of the houses, a pond or excavation, made while searching for the remains of a brave officer who fell fighting for his country's freedom. Sufficient water had accumulated there during the rainy season to entitle it to the name of *Laguna* or Lake of Genaro Vazquez, the name of the aforementioned hero; but it was so filled with *bavas*,—a small species of alligator,—terrapins, and toads, as to render the water undrinkable.

But to return to our head-quarters, the structure of which struck me so forcibly at first as a beehive of vast proportions, naturally suggesting the idea of a "land of milk and honey." Unfortunately, neither of these could be obtained for love or money, although the woods and pastures of the estate abounded in both the creatures that produced them. So we were compelled to resort to our reserved stock of *papelón* to sweeten our coffee, and to its own delicious natural aroma in the place of milk. As to the house itself, it only differed from the rest in that region in being larger, and perhaps in better order, than are the generality. Imagine a pyramidal structure, thatched with palm-leaves, the roof slanting to within a few feet of the ground, and supported on stout posts of live timber, which served also as framework for the walls, and you will have some idea of the style of architecture peculiar to the country. Doors and windows are of no account in a country uniformly warm throughout the year, and where the inhabitants possess few articles capable of tempting the cupidity of light-fingered gentry. Therefore an ox-hide stretched across the openings left in the walls to admit light and the inmates is all that is required to keep off uninvited guests. As an exception to this rule, our mansion of San Pablo had one or two rooms

set apart for invalids, provided with doors and windows of solid planks of timber in the rough; the other apartments had the upper half of the walls purposely left open, to admit full and free entrance of light and air. A narrow piazza or corridor, formed by the slanting of the roof to within five feet of the ground, ran along the entire length of the main building, and was intended more as a protection to the rooms against the sun and rains than as a resort for the inmates.

The first step, on arriving, was to secure a place in the open reception-room for my own chattels and hammock, before all the spare posts and hooks had been appropriated by my companions. This accomplished, I proceeded to a thorough examination of my saddle and its accoutrements, so as to have them adapted to the peculiar mode of travelling in the Llanos. This care I left to the good judgment of our attendants, not being myself sufficiently skilled in the art of mending, greasing, and putting in order the complicated gear of our riding equipment. In the same predicament were also my two English companions, and our worthy doctor; a kind word, however, addressed to the good-natured Llaneros—especially if accompanied with a drop of *aguardiente*—never failed of enlisting their services in our favor.

Habit, as well as necessity, is sometimes the mother of invention, as my experience soon taught me that, to get along in my new quarters, it would be requisite to set aside the airs and insignia of civilization. Divesting myself, therefore, of all such superfluities as coat, cravat, pants, and shoes, I adopted the less cumbrous attire of the Llaneros, consisting mainly of breeches tightly buttoned at the knee, and a loose shirt, usually of a bright checkered pattern. Shoes are altogether dispensed with in a country like the Llanos, subject to drenching rains, and covered

with mud during a great portion of the year, besides the inconvenience they offer to the rider in holding the stirrup securely when in chase of wild animals. The leg, however, is well protected from the thorns and cutting grass of the savannas by a neat legging or *botin*, made of buff-skin, tightly buttoned down the calf by knobs or studs of highly polished silver. Another characteristic article of dress, and one in which the wearers take great pride, is the linen checkered handkerchief loosely worn around the head. Its object is ostensibly to protect it from the intensity of the sun's rays; but the constant habit of wearing it has rendered the handkerchief as indispensable a head-dress to the Llaneros as is the cravat to the neck of the city gentleman.

[The traveller proceeds with further details of the life of these people, and with an account of their half-savage method of slaughtering their cattle; which we can well omit for a more general descriptive passage.]

The people inhabiting the vast region of the Llanos, although claiming descent from the old Castilian race, once the rulers of the land, are, in fact, an amalgamation of the various castes composing the present population of the republic. These are the whites, or the descendants of the European settlers of the country; the aborigines or Indians, and a great portion of blacks. In most of the towns the native whites preponderate over all others, and represent the wealth as well as the most respectable portion of the community; in the villages and thinly populated districts of the plains a mongrel breed, resulting from the admixture of these three, constitute the majority of the inhabitants. These are dispersed over an area of twenty-seven thousand square miles, making a proportion of only fourteen individuals, out of a population of three hundred and ninety thousand, to every square mile.

This race, although vastly inferior to the first in mental capacity and moral worth, is endowed with a physique admirably adapted to endure the fatigues of a life beset with dangers and hardships. Cast upon a wild and apparently interminable plain, the domain of savage beasts and poisonous reptiles, their lot has been to pass all their life in a perpetual struggle, not only with the primitive possessors of the land, but with the elements themselves, often as fierce as they are grand. When it is not the alarm of the dreaded viper or the spotted jaguar, it is the sudden inroad of vast inundations, which, spreading with fearful rapidity over the land, sweep off in one moment their frail habitations and their herds. Nevertheless this insecure existence, this continual struggle between life and death, between rude intellect and matter, has for the Llanero a sort of fascination, perhaps not so well understood by people possessing the blessings and ideas of civilization, but without which he could not exist, especially if deprived of his horse and cast among the mountain region north of his cherished plains.

The modern Centaur of the desolate regions of the New World, the Llanero spends his life on horseback; all his actions and exertions must be assisted by his horse; for him the noblest effort of man is when, gliding swiftly over the boundless plain and bending over his spirited charger, he overturns an enemy or masters a wild bull. The following lines of Victor Hugo seem as though copied from this model: "He would not fight but on horseback; he forms but one person with his horse; he lives on horseback; trades, buys, and sells on horseback; eats, drinks, sleeps, and dreams on horseback." Like the Arab he considers his horse his best and most reliable friend on earth, often depriving himself of rest and comfort after a hard day's journey to afford his faithful companion abundance of food and water.

Few people in the world are better riders than the Llaneros of Venezuela, if we except perhaps the Gauchos of Buenos Ayres, or equal to either in the dexterity they display in the wonderful feats of horsemanship to which their occupations in the field inure them from childhood. Their horses, moreover, are so well trained to the various evolutions of their profession, that animal and rider seem to possess but one existence.

The life of the Llanero, like that of the Gaucho his prototype, is singularly interesting, and resembles in many respects that of others who, like them, have their abode in the midst of extensive plains. Thus they have been aptly styled the Cossacks and the Arabs of the New World, with both of whom they have many points in common, but more especially do they resemble the last named. When visiting the famous Constantine Gallery of paintings at Versailles, I was struck with the resemblance of the Algerine heroes of Horace Vernet to our own, revealing at once the Moorish descent of the latter, independently of other characteristic peculiarities.

[Sir Francis Head, in his "*Journeys across the Pampas*," gives the following description of the infancy of a closely similar race.]

"Born in the rude hut, the infant Gaucho receives little attention, but is left to swing from the roof in a bullock's hide, the corners of which are drawn towards each other by four strips of hide. In the first year of his life he crawls about without clothes, and I have more than once seen a mother give a child of this age a sharp knife, a foot long, to play with. As soon as he walks, his infantine amusements are those which prepare him for the occupations of his future life; with a lazo made of twine he tries to catch little birds, or the dogs, as they walk in and out of the hut. By the time he is four years old he is on

horseback, and immediately becomes useful by assisting to drive the cattle into the corral."

When sufficiently strong to cope with a wild animal, the young Llanero is taken to the *majada* or great cattle-pen, and there hoisted upon the bare back of a fierce young bull. With his face turned towards the animal's tail, which he holds in lieu of bridle, and his little legs twisted round the neck of his antagonist, he is whirled round and round at a furious rate. His position, as may be imagined, is anything but equestrian; yet, the fear of coming in contact with the bull's horns compels the rider to hold on until, by a dexterous twist of the animal's tail while he jumps off its back, he succeeds in overturning his antagonist.

In proportion as he grows older and stronger, a more manly amusement is afforded him with the breaking in of a wild colt. This being, however, a more dangerous experiment, in which many a young eagle "is rendered a lame duck," he is provided with the necessary accoutrements to withstand the terrible struggle with the animal. Firmly seated upon his back and brandishing overhead a *chaparro* vine for a whip, the apprentice is thus installed in his new office, from which he must not descend until the brute is perfectly subdued; the coil of lazo in the hands of his merciless instructor would be the least evil awaiting him should he otherwise escape safe and sound from the desperate kicks and plunges of the horse.

Here commences what we may term the public life of the Llanero; his education is now considered complete. From this moment all his endeavors and ambition will be to rival his companions in the display of physical force, which he shows to an admirable degree when, armed with his tough lazo, he pursues the wild animals of his domain. If a powerful bull or wild horse tries to escape into the open plain, the cavalier unfurls the noose which is always

ready by his side, and the fugitive is quickly brought back to the corral. Should the thong give way under the impetuous flight of the animal, the rider seizes him by the tail, and whirling round suddenly, pulls towards him with so much force as to cause his immediate overthrow.

In all these exercises the roving cavalier of the Llanos acquires that feeling of security and enduring disposition for which he is famous. Unfortunately, it is often turned to account in disturbing the balance of power among his more enlightened countrymen; for he is always ready to join the first revolutionary movement offering him the best chance for equipping himself with arms of all descriptions. Next to the horse, the Llanero esteems those weapons which give him a superiority over his fellow-creatures,—viz., a lance, a blunderbuss, and a fine sword. If he is unprovided with either of these, he considers himself a miserable and degraded being, and all his efforts will tend to gratify this favorite vanity even at the risk of his own life. Therefore he goes to war, because he is sure, if victorious, of finding the battle-field covered with these tempting trophies of his ambition. In this, unfortunately, he is too often encouraged by a host of unprincipled politicians, who, not wishing to earn a livelihood by fair means, are eternally plotting against the powers that be.

THE FORESTS OF THE AMAZON AND MADEIRA RIVERS.

FRANZ KELLER.

[The author of the following selection, with his father, was sent in 1867, by the Minister of Public Works at Rio Janeiro, to explore the Madeira, and to project a railroad along its banks where the rapids rendered navigation impossible. His observations during this journey are given in "The Amazon and Madeira Rivers," from which we extract his remarks concerning the Brazilian forests.]

EVERYWHERE the decomposing organisms serve as bases for new formations. No particle, however small, is ever lost in the great household of Nature; but nowhere is her restless activity so conspicuous as in the tropics, where the succession of vegetable decay and life is so much more rapid than it is in colder climes; and which will strike the reflecting student more especially in the wide, forest-clad valleys of tropical America, and on the Amazon and its affluents.

On the heights of the Cordillera the process is already at work. The waste of the mountain-slopes, broken off by rills and torrents, and carried by them into the main river, slowly drifts down-stream in the form of gravel-banks, until, scattered and rent asunder in a thousand ways, it finally takes permanent form as light-green islands, which are soon covered and protected with a dense coat of vegetation.

As every zone of geologic formation in the extensive valley adds its tribute, these banks are a kind of mineralogical collection, which shows samples of all the rocks on the river-banks, with the exception, perhaps, of light pumice-stone, the produce of the volcanoes of the Andes, which drifts down-stream in large pieces, and is highly prized by the Tapuia population (on the lower course) for sharpening and cleaning their weapons and tools. Even when not picked up by hunter or fisher, it is not lost. It will be arrested by some snag or projection of the shore, it will so get embedded in the newly-forming sediment, and thousands of years hence its silicic acid will afford the necessary material for the hard glassy bark of a bambusa, or the sharp edge of a reed. When the currents are not strong enough to move the larger banks, they at least carry sand and earth with them, and deposit them as shoals or new alluvion at less exposed spots. . . .

The undermined concave shores are sometimes a serious danger to the passing barque, as even the slight ripple of a canoe is sufficient to bring down the loosely overhanging earth, often covered with gigantic trunks. These concave sides, with their fallen trees and their clusters of sinking javary-palms, supported sometimes by only a tangled network of tough lianas, give to the scenery that peculiar character of primeval wildness which is so charming to foreigners.

When one has climbed up the steep shore, often forming huge terrace-like elevations, and has safely passed through a labyrinth of interwoven roots and creepers into the interior of the forest, which is getting freer from underwood at some distance from the river, he is oppressed with the sensation of awe and wonder felt by man on entering one of the venerable edifices of antiquity.

A mysterious twilight encompasses us, which serves to intensify the radiance of the occasional sunbeam as it falls on a glossy palm-leaf, or on a large bunch of purple orchid-flowers. Splendid trunks, some of them from twenty to thirty feet in diameter, rise like so many pillars supporting the dense green vault of foliage; and every variety of tall, graceful palms, spare and bushy, and bearing heavy berries of bright yellow or red, struggle to catch a glimpse of the light, from which they are shut out by the neighboring giants, of which the figueira (or wild fig-tree) is one of the most striking, in the dimensions of its crown and stem, and in the strange shape of its roots, which project like huge outworks. These seem to grow in all directions, forming props, stays, and cross-bars wherever they are wanted, just as if the whole were a soft plastic mass, the sole purpose of which was to supply, with a minimum of material, as much stability as possible to the trunk, whose wood is of extreme softness and whose roots are not deep.

The pachiuba-palm (*Iriarte exorrhiza*) and some species of *Cecropiæ* exhibit other extravagances in their roots. They appear as if standing on stilts, the real trunks only beginning at eight or ten feet above ground.

But, more than all, it is the profusion of orchids and *Bromeliæ* that excites our admiration. These bright children of the tropics envelop with dense foliage as well the fallen and mouldering trunks as those yet upstanding in full vigor and bloom, thus forming hanging gardens of astounding magnificence, which reveal leaves and flowers of the most irregular shapes and colors. Everywhere, on the branches and on the ground, and even from out the fissures of the bare rock, light ferns and rich moss spring up and clothe the decaying trunks with fresh green. Of mosses and ferns, especially tree-ferns, we found a greater exuberance and a larger variety, in species as well as in individuals, in the Southern provinces of the empire, São Paulo and Paraná; but for splendid palms and gigantic dicotyledons the North is decidedly the richer of the two.

Without the aid of the pencil it is indeed scarcely possible to give an adequate idea of the magnificence of this vegetation, especially of the manner in which the different forms are grouped. We may see, it is true, in our own hot-houses, well-trimmed palms, beautiful orchids with their abnormal blossoms, and *Aroideæ* with their bright, sappy, sometimes regularly perforated, leaves; but how different is this from the virgin forest, wherein Nature, undisturbed by man, has created her own prodigies, and where no narrow pots separate her children from the maternal soil, and where no dim roof of glass intervenes between them and the blue ether! Nor, in our carefully tended hot-houses, is the eye ever gratified with such agreeable contrasts as are afforded by the silver-gray and rust-brown tints of the decayed leaf of the palm or the fern-tree, or

the black bark of the rotting trunk, with the blazing scarlet of some heliconia blossom. How difficult it must be to give to every plant, especially to orchids, the exact quantity of light, warmth, and moisture it requires, can be understood only by those who have seen clusters of them hidden in the deep shade of the tree-crowns, while others are exposed to the scorching rays of the sun in the vicinity of a river or in some clearer part of the forest; some species thriving on the bare rock almost, and others clinging fast with their white rootlets to the moist rotting bark of a tree. . . .

But of far greater importance to the half-civilized riverines than either palms or orchids, for whose beauties they have no eye, are the cacao and the caoutchouc-tree (*Siphonia elastica*), products of the virgin forest essential to the future prosperity of the whole country.

Although India contributes to the supply of caoutchouc, the precious resin which is transformed into a thousand different shapes every year in the factories of Europe and North America, and sent to the ends of the earth, it cannot compete with Brazil, which takes the first place among the rubber-producing countries, in respect as well of the vastness of its export of the material as of its superior quality.

On the shores of the Amazon its production, it is true, has already been diminished by unreasonable treatment of the trees; the idea of replacing the old ones by young saplings never having presented itself, apparently, to the mind of the indolent population; but the seringas, or woods of rubber-trees, on the banks of the Madeira, the Purús, and other tributaries of the main river, still continue to furnish extraordinary quantities of it. The province of Amazon alone exports more than fifty thousand arrobas (one million six hundred thousand pounds) yearly, while the total

of the exports of the whole basin slightly exceeds four hundred thousand arrobas, or twelve million eight hundred thousand pounds, per annum. . . .

Unfortunately, there has not been until now the slightest attempt made to cultivate this useful tree; and all the caoutchouc exported from Pará is still obtained from the original seringá groves. The trees of course suffer, as they naturally would under the best of treatment, from the repeated tapping and drawing-off of their sap, and the rubber collectors, therefore, must look about for new groves of the tree in the unexplored valleys of the more distant interior.

The planting of the *Siphonia elastica* would be a more profitable investment, as it yields the precious milk in the comparatively short space of twenty or twenty-five years; but, under the combined influence of the indolence of the mestizoes and the shortsightedness of the government, measures to that end will be adopted and carried into effect only when the rubber exportation shall have diminished with the destruction of the trees, and when European and North American manufacturers shall have found out a more or less appropriate substitute for the too costly resin.

Near the Praia de Tamanduá we acquainted ourselves with all the particulars respecting the collection and preparation of the caoutchouc at the cottage of a Bolivian seringueiro, Don Domingo Leigue. As I have already stated, the *Siphonia* grows, or at least thrives, only on a soil wherein its stem is annually submerged by the floods to the height of three feet or more. The best ground for it, therefore, is the *igapó*, the lowest and most recent deposit of the river; and there, in the immediate vicinity of the seringaes, may be seen the low thatches of the gatherer's huts, wretched hovels mostly, rendered tenatable during the inundations by the device of raising the floors on

wooden piles of seven feet height, in which the canoe, the seringueiro's indispensable horse, also finds a protected harbor. Unenviable truly must be the life of the happy proprietor, who has nothing to do in the seringal during the wet season, and who then has ample leisure to calculate exactly the intervals between his fits of ague, and to let himself be devoured by *carapanás*, *piums*, *motúcas*, and *mucuims*; under which euphonious names are known some of the most terrible of insect pests.

Narrow paths lead from the cottage, through the dense underwood, to each separate tree; and, as soon as the dry season sets in, the inmate of the palace just described betakes himself with his hatchet into the seringal, to cut little holes in the bark. The milk-white sap immediately begins to exude into pieces of bamboo tied below, over little clay cups set under the gashes to prevent their trickling down the stems. The collector travels thus from trunk to trunk; and, to facilitate operations, on his return visit he pours the contents of the bamboos into a large calabash provided with liana straps, which he empties at home into one of those large turtle-shells so auxiliary to housekeeping in these regions, serving as they do for troughs, basins, etc.

Without any delay he sets about the smoking process, as the resinous parts will separate after a while, and the quality of the rubber so become inferior. An earthen jar, without bottom and with a narrow neck, is set by way of chimney over a fire of dry urucury, or uauassú palm-nuts, whose smoke alone, strange to say, has the effect of instantly coagulating the caoutchouc sap, which, in this state, greatly resembles rich cow's milk. The workman, sitting beside this "chimney," through which roll dense clouds of a smothering white smoke, from a small calabash pours a little of the milk on a sort of light wooden shovel,

always careful, by proper management of the latter, to distribute it evenly over the surface. Thrusting the shovel into the thick smoke over the opening of the jar, he turns it several times to and fro with great rapidity, when the milk is seen to consolidate and to take a grayish-yellow tinge.

Thus he puts layer upon layer, until at last the caoutchouc on both sides of the wood has reached about an inch in thickness, when he thinks the "plancha" ready. Cutting it on one side, he takes it off the shovel and suspends it in the sun to dry, as there is always some water between the several layers, which should, if possible, evaporate. A good workman is thus able to prepare five or six pounds of solid *seringa* in an hour. The *plancha*, from its initial color of a clear silver-gray, turns shortly into a yellow, and finally becomes the well-known dark brown of the rubber, such as it is exported.

The more uniform, the denser and freer of bubbles, the whole mass is found to be, the better is its quality and the higher the price it fetches. Almost double the value is obtained for the first-rate article over that of the most inferior quality, the so-called *sernamby* or *cabeça de negro* (negro's head); which is nothing but the drops collected at the foot of the trees, with the remains of the milk scraped out of the bottoms of the calabashes. The rubber of India is said to be much like this *sernamby*, and, like it, to be mixed with sand and small pieces of bark. By way of testing the quality, every *plancha* is cut through again at *Pará*; by which means discovery is made, not only of the bubbles, but also of any adulteration that might be effected with the milk of the *mangaba*, that fine plant with dark glossy leaves, now found so often in European saloons under the erroneous name of rubber-plant. . . .

The wild cacao, with its large lancet-shaped hanging

leaves, and its cucumber-like fruit springing directly from the stem, is one of the characteristic features of the *virgem* [or solid soil], on which it often forms dense thickets, which are all the more impenetrable that the boughs—exhibiting frequently at the same time the small reddish flowers and the ripe golden fruit, in which the seeds lie embedded in a sweet white marrow—bend to the ground and there take root again.

But the india-rubber and the cacao are not the only treasures worth collecting in these forests. Even now the export of the Pará nuts, the fruit of the *Bertholletia excelsa*, yields an annual revenue of two hundred thousand dollars; and the copaiba oil and the urucú, the seeds of the *Bixa orellana*, used for dyeing, about one hundred thousand dollars. These sums seem small enough, it is true, but there are perhaps a hundred times those values of the rich-flavored nuts rotting unheeded in the forests, and above a score of other rich oily seeds, at present collected only for the use of the natives, not to mention several resins which yield the finest varnishes, plants giving the most brilliant hues, and others with fibres that would serve not only for the finest weavings, but also for the strongest ropes; besides about forty of the most indispensable drugs, all which might become most valuable articles of export. . . .

Notwithstanding the fertility of tropical vegetation, I doubt whether any other part of the world, in the same latitude, can offer as great a number of useful plants as does the Amazon Valley; and now, when all-transforming steam is about to open up to us this rich emporium, European industry should take advantage of the hitherto neglected treasures. What might not be done with the fibres, some of which surpass our hemp and flax in all respects? The curauá, for example, a sort of wild pine-apple, gives a delicate transparent flax of a silky lustre, such as

is used in the Philippine Islands, on a large scale, it appears. It is sold under the name of *palha* at Rio de Janeiro. The tucum and the javary would make excellent ropes, cords, nets, etc., well calculated to resist moisture and rot; and the piassaba, the murity, etc., would readily supply solid brushes, brooms, hammocks, hats, baskets, mats; while the snow-white bast of others would give excellent paper.

The lianas or cipós of these countries are, besides their minor uses, quite indispensable to the half-civilized natives for the construction of their light cottages, taking the place (as they do) of our nails and cramp-irons, beams, posts, and rafters. The whole palm-leaf roof is fastened, and artificially interwoven and intertwined, with tough creepers of nearly an inch thickness. . . .

In the hot lowlands of the Amazon, in the shade of endless forest, there is many an herb of mysterious virtue, as yet known only to wild Indian tribes, while the fame of others has already spread over the ocean. Who has not heard of the *urary*, or *curare*, the quick arrow-poison which, in the hands of clever physiologists and physicians, promises not only to become a valuable drug, but to give us interesting disclosures on the activity of the nerves?

The wondrous tales of former travellers regarding the preparation of this urary have been rectified long ago. The venom of snakes is not used for it, but the juice of the bruised stems and leaves of several kinds of strychnos and apocynas is simply boiled over a coal fire, mixed with tobacco-juice and capsicum (Spanish pepper), and thickened with the sticky milk of some Euphorbiacea to a hard mass. This manipulation, moreover, is not undertaken by the old squaws of the tribe, devoting themselves to a painful death thereby, as the old stories ran, but, as there is no danger whatever, by the young wives of the warriors, who look upon it as part of their household duties, or by the men

themselves. There are about eight or ten different poisons of similar, but not identical, composition and preparation, of which the urary of the Macusi Indians, and the curare, from Venezuela and New Granada, are considered the most powerful.

This dark-brown, pitchy substance, usually kept in little earthen pots, is lightly spread over the points of the weapons,—their long arrows, their light spears, and the thin wooden shafts, of about a foot long, which they shoot through immense blow-tubes (*sarabacanas*). Immediately upon the diffusion in the blood of the slightest portion of the poison, the limbs, one by one, refuse to work, as if overcome with torpor, while the mind apparently retains its activity until death ensues, which it does in a few minutes' time, from palsy of the lungs. It is strange that only those nerves are affected which regulate the movements depending on our own will, whereas those movements we cannot control—the beating of the heart, for example—continue unaltered to the very last. Experiments made by French physicians upon animals have shown that, if the lungs are artificially kept in activity for several hours, the poison will be rejected by natural means, and no bad consequences will ensue. Of late the principal objection to the employment of the urary in medicine—its unequal strength—has been completely overcome by the effective alkaloid—the curarin—being extracted. This is about twenty times as powerful as the urary, and has been used successfully in the treatment of tetanus. The Indians shoot birds and monkeys, which they wish to tame, with very weak curare, rousing them from the lethargy which overpowers them with large doses of salt or sugar-juice; and this treatment is said to be very effective, also, in the reduction of their wildness. . . .

The guraná, prepared from the fruit of the *Paullinia sor-*

bilis, is a hard, chocolate-brown mass, of a slightly bitter taste, and of no smell whatever. It is usually sold in cylindric pieces of from ten inches to a foot in length, in which the half-bruised almond-like seeds are still distinguishable; the more homogeneous and the harder the mass, the better is its quality. To render it eatable, or rather drinkable, it is rasped as fine as possible on the rough, bony roof of the mouth of the *sudis gigas* (pirá-rucú), and mixed with a little sugar and water. A teaspoonful in a cup of warm water is said to be an excellent remedy in slight attacks of ague.

The taste of this beverage, reminding one slightly of almonds, is very palatable; still, it scarcely accounts for the passionate liking entertained for it by the inhabitants of the greater part of South America. It must be the stimulating effects of the paullinin it contains (an alkaloid like caffeine and theïne) that render it so indispensable to those who have been accustomed to it. All the boats that come lightly freighted with ipecacuanha and deer- or tiger-hides, from Mato Grosso down the Arinos and the Tapajoz, in face of the considerable cataracts and rapids of the latter, take their full loads of guaraná at Santarem; and the heavy boats of the Madeira also convey large quantities of it to Bolivia; for at Cuyabá, as well as at Santa Cruz de la Sierra and Cochabamba, there are many who cannot do without their guaraná, for which they often have to pay thirty francs the pound, and who prefer all the rigors of fasting to abstinence from their favorite beverage. On the other hand, the mestizo population on the Amazon, where it is prepared on a large scale by the half-civilized tribes of the Mauhés and Mundurucús and sold at about three francs the pound, are not so passionately attached to it; they rather take coffee and a sort of coarse chocolate, which they manufacture for themselves.

CANOE- AND CAMP-LIFE ON THE MADEIRA.

FRANZ KELLER.

[To the extract just made from Keller's "Amazon and Madeira Rivers," we add the following, in which an interesting account of camp-life in the forest and river regions of Brazil is given.]

THE lower course of the Madeira presents, for more than four hundred and sixty miles, a picture of grand simplicity, and, it must be owned, monotony, which, magnificent as it appears at first, wearies the eye and sickens the heart at last,—a dead calm on an unruffled, mirror-like sheet of water glaring in the sun, and, as far as the eye can reach, two walls of dark-green forest, with the dark-blue firmament above them; in the foreground, slender palms and gigantic orchid-covered trunks, with blooming creepers hanging from the wave-worn shore, with its red earthslips, down into the turbid floods. No hill breaks the finely-indented line of the foliage, which everywhere bounds the horizon, only here and there a few palm-covered sheds peep out of the green; and still more rarely do we sight one of their quiet dark inmates. Stately kingfishers looking thoughtfully into the river, white herons standing for hours on one leg, and alligators lying so motionless at the mouth of some rivulet that their jaggy tails and scarcely protruding skulls might easily be taken for some half-sunken trunks, are the only animals to be seen, and certainly they do not increase the liveliness of the scene. Dreary and monotonous as the landscape, the days, too, pass in unvaried succession.

With the first dawn of day, before the white mist that hides the smooth surface of the river has disappeared with

the rays of the rising sun, the day's work begins. The boatswains call their respective crews; the tents are broken up as quickly as possible; the cooking apparatus, the hammocks and hides that served as beds, are taken on board, together with our arms and mathematical instruments, and every one betakes himself to his post. The *pagaías* (paddles) are dipped into the water, and the prows of our heavy boats turn slowly from the shore to the middle of the stream. Without the loss of a minute, the oars are plied for three or four hours at a steady but rather quick rate, until a spot on shore is discovered easy of access and offering a dry fire-place and some fuel for the preparation of breakfast. If it be on one of the long sand-banks, a roof is made of one of the sails, that rarely serve for anything else; if in the wood, the undergrowth, in the shade of some large tree, is cleared for the reception of our little table and tent-chairs.

The functions of the culinary *chef* for the white faces, limited to the preparation of a dish of black beans, with some fish or turtle, are simple enough, but, to be appreciated, certainly require the hearty appetite acquired by active life in the open air. The Indians have to cook by turns for their respective boats' crews; their unalterable bill of fare being a pap of flour of Indian corn or mandioca, with fresh or dried fish, or a piece of *jacaré* (alligator).

Most of those who are not busy cooking spend their time preparing new bast shirts, the material for which is found almost everywhere in the neighborhood of our halting-places. Soon the wood is alive with the sound of hatchets and the crack of falling trees; and, even before they are summoned to breakfast, they return with pieces of a silky bast of about four and a half yards long and somewhat less than one and a quarter yard wide. Their implements for shirt-making are of primitive simplicity,—

a heavy wooden hammer with notches, called *maceta*, and a round piece of wood to work upon. Continuously beaten with the *maceta*, the fibres of the bast become loosened, until the originally hard piece of wood gets soft and flexible, and about double its former breadth. After it has been washed, wrung out to remove the sap, and dried in the sun, it has the appearance of a coarse woollen stuff of a bright whitish-yellow or light brown, disclosing two main layers of wavy fibres held together by smaller filaments. A more easily prepared and better working-garment for a tropical climate is hardly to be found than this, called *cáscara* by the Indians of Bolivia, and *turury* by those of the Amazon. Its cut is as simple and classical as its material. A hole is cut in the middle of a piece about ten feet long, to pass the head through, and the depending skirt is sewn together on both sides, from below up to the height of the girdle, which usually is a piece of cotton string or liana.

Another branch of industry our Indians were busy at, in their hours of leisure, was the fabrication of straw hats, with the young leaves of a kind of little palm, the same which supplies the excellent hats imported from Ecuador and Peru, and known in Europe under the name of Chile or Panama hats. Dexterity at all sorts of wicker-work seems to be innate to this race; and the prettiest little baskets and the finest mats of colored palm-leaves are to be bought on the Missions of the Mamoré at the lowest prices.

But all these occupations are left at the call of the first mate, who has the proud title of *Capitano*. The boats' crews crowd round their pots, each one receives his allotted portion in a calabash or a basin of horn, and their spoons of the same material are soon in full activity. If a *jacaré* has lately been shot, or caught in a *laço* (sling), every one,

after roasting his own piece of it on the spit, proceeds to cut at the large slices of the white meat (which, though in appearance like fish, is as tough as india-rubber) with the satisfaction usually produced by three or four hours of hard rowing on view of anything eatable. One tribe especially, the Canichanas, from the former Mission of San Pedro at the Mamoré, think roast caiman the finest eating in the world; while others, the Cayuabas from Exaltacion, and the Mojos from Trinidad, whose palates are somewhat more refined, prefer beef, fish, or turtle to the musk-exhaling saurian. Notably the turtles, which are not found on the Guaporé and Mamoré (they are not met with above the rapids of the Madeira), are prized by them, though *we* grew rather tired of them, and no wonder. On the lower Madeira, at our fires, there was almost daily going on the cooking of turtles, of all sizes, from the full-grown one of a yard in length to the smallest of the size of a hand; and in every variety of preparation, too,—whole, and chopped up as for soup; stewed; and roasted in their own shell or on the spit.

Bathing in the river, immediately after meals, is a luxury invariably indulged in by all the Indians; and I never remarked that it was attended by any evil consequences to them.

After a rest of two hours' duration, the cooking utensils, the hammocks, and improvised tents were carried on board again, and the voyage continued. A second halt was made after rowing for two or three hours, when we came in sight of a good place for fishing, such as the mouth of some smaller river, or an extensive mud-bank. Such places were usually recognizable from afar, by the multitude of snow-white herons and of long caimans, which, finding it out before us, crowded there in peaceful unity, and with similar intentions. The vicinity of the scaly monsters is

scarcely heeded by the Indians, who fish and take their bath, laughing and jesting, though somewhat hugging the shore, just as if there were no such thing as the tail or the tooth of the jacaré in the world; and, indeed, these creatures are themselves in much greater danger than the redskins. When the last steak of alligator has been consumed, one of the Canichanas is sure to ask leave to have some fun, and to provide at the same time for their next dinner. Of course the permission is always granted, as the sport keeps up their spirits and spares our provisions. Without loss of time, then, one of them, having carefully fastened a strong loop of raw hide at the end of a long pole, and having dexterously slipped off his bast shirt, creeps slowly through the shallow water, pole and sling in hand, as near as possible to the alligator, which looks on at these preparations with perfect apathy, only now and then betraying a sign of life by a lazy movement of its powerful tail. But it does not take its eyes off the Indian as he crawls nearer and nearer. The fatal sling is at arm's length from its muzzle, and yet it does not see it. As if under the influence of witchcraft, it continues to stare with its large protruding eyes at the bold hunter, who in the next moment has thrown the loop over its head, and suddenly drawn it to with a strong pull. The other Indians, who the while have been cowering motionless on shore, now rush into the water to the help of their companion, and four or five of them land the ugly creature that with all its might struggles to get back into the water, lashing the sand with its tail and showing its long teeth; but a few vigorous blows with an axe on the tail and skull soon render it tame enough. If, instead of dragging back, the alligator were only to rush forward boldly to the attack of the Indians, they would, of a certainty, leave pole and sling and run for their lives; but this bright idea never seems

to occur to the uncouth animal, and the strife always ends with its death. Though there were more than a dozen of them killed during the voyage, I never thought of sending a rifle-bullet through the thick skull of one, except on one occasion, when I was afraid that one of our Canichanas was about to make too close an acquaintance with the hard, jagged tail of an extraordinarily strong monster, which measured full sixteen and a half feet.

Even before the huge spoil is cut up, four musk-glands, placed by twos under its jaw, and on its belly, near the beginning of the tail, must be carefully taken out, to prevent the diffusion, over the whole body, of the penetrating odor of the greasy, brown liquid they contain. These glands, which are about an inch and a half long and as thick as a finger, are carefully tied up and suspended in the sun to dry. Mixed with a little rose-water, their contents serve, as we were told, to perfume the raven-black tresses of the elegant Bolivian ladies at Santa Cruz de la Sierra and Cochabamba, in spite of, or rather by reason of, their strong scent, which gives the headache to all save these strong-nerved señoritas, who love a bull-fight above everything, who know how to roll the cigarito, and to dance the fandango with matchless grace, but who scarcely are able to write their own names.

After such a pleasant interlude of fishing or hunting, the paddles are plied with renewed vigor until the evening, when sleeping quarters are selected, either on a sand-bank or in the forest. The canoes are moored by strong piasaba ropes in some recess of the bank, where they are protected against drifting trunks; the tents are erected, and preparations ensue for the principal meal. Meanwhile, after the very short interval of twilight usual in the tropics, night almost suddenly throws her dark veil over the valley, and the bright constellations of the southern sky in quiet majesty adorn the firmament.

While we prepare to take astronomical observations, half a dozen large fires are lighted round about, in whose fitful blaze the neighboring forest-trees appear like huge phantoms, looking contemptuously down on us, poor tiny mortals. Our Indians warm themselves in the cheerful glow, smoking, and chatting of the day's adventures, or rather of what are regarded as such,—unusual good or ill luck at fishing and hunting; the casual meeting of some canoe; or the sight of a seringueiro's poor cottage. Work over, they take off the rough cáscara, and put on the camiseta, a cotton garment without sleeves, resembling a wide poncho sewn together at the sides, and whose dazzling whiteness is set off by two scarlet stripes along the seams. The ample folds and the simple cut of the garment, which is made by the Indian women of the Missions on very primitive looms, give quite a stately, classical appearance to the numerous groups round the fires. Such must have been the aspect presented by the halting-places of those daring seafarers, the Phœnicians, who were the first to call into life an international commerce, and whose light-rigged barques first ventured to distant shores, to bring home the precious amber and the useful tin. Only the dense swarms of mosquitoes, which set in immediately after sunset, remind us rather unpleasantly that we are far off from those happy northern regions, where such a nuisance can hardly be well imagined. Especially in the dense forest beneath cacao-bushes, or under the close leaf-age of the large figueiras, where no breath of air incommodes those light-winged tormentors, it is quite impossible, for the European at least, to close an eye without the shelter of a mosquiteiro (mosquito-net); and we could but wonder at our Indians, most of whom did without it. After supper they simply spread a hide on the ground, on which, with no covering other than the starry firmament

above them, they slept undisturbed till the dawn, only occasionally brushing away, as if by way of diversion, the most obtrusive of the little fiends. The capitanos only, and one or other of the older rowers, allow themselves the luxury of good cotton hammocks, which are also made by their wives in the Missions.

Such, with few variations, was the course of our daily life, until we reached the regions of the rapids, when, of course, the hundred little incidents connected with the dragging of the canoes through narrow, foaming channels, and with carrying the goods and the vessels themselves overland, disturbed the monotony of this rude forest life.

BESIEGED BY PECCARIES.

JAMES W. WELLS.

[It is to "Three Thousand Miles through Brazil, from Rio de Janeiro to Maranhão," by James W. Wells, F.R.G.S., that we owe the following exciting example of the perils of a hunter's life in the wilds of the tropics. Mr. Wells and his fellow-travellers, while journeying up the valley of the Sapão, far in interior Brazil, came upon traces of the peccary, an animal which, from its fearlessness, and its habit of moving in troops, is occasionally a very unsafe creature to meet. What followed we shall leave the author to tell.]

WE were down in the deep, narrow valley, where the slopes of the table-land surrounded us like a wall, up which there was no visible ascent. The tall, rank grass was also littered with boulders of sandstone and short, gnarled, and distorted cork-trees; it was a toilsome march for both men and animals, but there, certainly, must be the head-quarters of all the peccaries of the region, for everywhere the ground was furrowed and rooted up, the grass trodden down in

long lanes, the pools of water turbid, from their wallowing, and the place odorous as a rank pigsty; and yet, strange to say, not a pig was to be seen, fortunately for us; for in such an inconvenient place an attack from these vicious animals in the numbers they could evidently collect would have enabled them to take us at great disadvantage.

We pushed on the animals to get out of this pig-set man-trap, and eventually got clear of the labyrinth on the farther side of the last feeder of the main morass, and, after some difficulty, found an ascent on to the *geraes*, where we made a bee-line to the Sapãc across the flats.

During the passage of the swamps the Don said,—

“Ah! Senhor Doctor, what a shame to leave such a lovely place; if you and I were only here to-night, what fun we would have with the peccaries; but, patience, they will make us a visit to-night, because of the trail of the dogs.”

But neither time nor place would permit of carrying out the Don's desires, as there was neither water nor pasture for the animals. The Don's remark about the peccaries paying us a visit is owing to a popular belief that these animals, when in considerable numbers, will follow a dog's trail for many miles, and attack and kill him. In fact, it is customary with the hunters to imitate the barking of a dog to attract the attention of the pigs, and induce them to collect together and make an attack; when, the hunters being safely ensconced in trees, the game is perfectly safe, as the men have only to shoot what they require.

The ground traversed that afternoon was not so free from bush as we had hitherto found, being in many places thickly covered with dense cerrado (abounding in immense quantities of the india-rubber-producing Mangaba-tree), where progress was very slow and difficult, and required the free use of our wood-knives. After a long and wear-

some march, we reached the valley of the Sapão again, quite eight miles from the peccaries' haunt.

I found the river valley presented much the same characteristics as we had found lower down. For the purposes of a railway it is admirable; the gradients are practically level, and the only works of art required would be in crossing the many *burity* swamps that intersect the route, and these, although numerous, are narrow.

Even the Rio Sapão itself could doubtless be made into a good canal, in the absence of a railway, for there is plenty of water, and the ground offers great facilities for straightening its course.

Especial care was taken in preparing the camp that night. The Don and José superintended the operation of constructing the fort, the sides of which were further protected by spreading over them the hides used for covering the packs of the mules. Bush was also cut to make up and enlarge the defences, and a strong stake was driven into the ground inside the fort for the purpose of securing the dogs in case the peccaries arrived. The camp was made on the borders of a clump of trees, to which we were enabled to sling the hammocks, no one caring to sleep on terra firma that night, but two of the men who were unprovided with hammocks spread their hides on the ground inside the fort.

After dinner, of course, peccaries formed the sole subject of conversation, but hour after hour went by, yet no signs of their presence appeared; and, after arranging the watches for the night, we turned in, and with the fatigues of the day I was soon asleep.

It appeared to me, however, that I had barely closed my eyes, when I felt my hammock violently shaken. It was the Don awakening me, saying, "Wake up, here are the *porcos*, we are going to have some fun." The first peculiar-

ity that struck me was the prevalence of the odor of old pigsties. I sat up, looked around, and listened. The pitchy blackness of night surrounded us, but the fire, burning brightly, sent its flickering light upon the tree-trunks, the foliage, and the hammocks; two men were in the fort with gun and knife in hand, and the dogs tied to their stake were with difficulty kept quiet, and vented their excitement in deep growls. As I listened it became evident that we were surrounded by some animals, for in many directions was heard, in the stillness of night, the sound of bodies moving through the bush, twigs snapping, grass rustling, etc. It was a moment of suspense, but not for long; for suddenly, from all around us, came a blood curdling sound of the simultaneous snapping of teeth from vast numbers of the enemy, followed by the appearance of a crowd of charging black animals, rushing with wonderful speed towards a common centre, the fort. We in the hammocks each lighted a coil of wax tapers that were prepared ready for the occasion.

And what a scene ensued! the fire was rapidly scattered, and partly extinguished; under and around us was a seething mass of black peccaries, barely distinguishable in the dim light, but all pushing and struggling to the front; the men in the fort had discharged their weapons, and were hard at work, hacking and thrusting at the peccaries as they endeavored to swarm up the smooth surface of the hides that covered the sides of the fort. The men in the hammocks, after discharging their guns, reached down and slashed with their knives at the swarming animals below them.

The attack was more like the wild, reckless bravery of the Arabs of the Soudan, for as pig after pig fell squealing and disabled, scores more struggled for his place. The faint light of the tapers and the partly extinguished fire

served but to dimly illuminate the elements of the strange, noisy, wildly weird scene; the trunks of the surrounding trees and their foliage; the swinging hammocks with their occupants reaching downward, cutting and thrusting with their long, gleaming knives; the dim figures of the men in the *trincheria*, repelling with shouts and thrusts the swarming enemy; the wild, rushing, charging forms of the black bodies of the peccaries, as in great numbers they threw themselves against the fort, regardless of being struck down one after the other, and always impelled forward by those in the rear struggling to the front; others made ineffectual attempts to reach our hammocks or viciously gashed the trees that gave us support; the extremely disagreeable and nauseous odors of the animals, their snapping of teeth, like musketry file-firing, the reports of the firearms, the shouts of the men, the howling and barking of the dogs, and the dim light, created an indescribably strange and exciting scene. Every bullet of my revolver took effect. I shouted to the men to reserve their fire, and fire volleys, but it was like talking in a gale of wind at sea.

In spite of all efforts, still the battle raged. The animals appeared to be in immense numbers, for, as far as the faint light would permit, the ground was seen covered with their moving bodies, rushing, struggling, the strongest beating down the weakest, grunting, squealing, and snapping their teeth; and noticeable above everything was the abominable exhalations from their bodies, an odor like a combination of rank butter and garlic.

I was getting anxious not only for my baggage, but for the men behind the fort, who had to cut and thrust like madmen; the excitement was intense. The strong raw hides were ripped up as though slashed with a sharp knife, and the bags of beans and farinha were freely streaming

their contents on the ground from innumerable rippings from the keen sharp tusks.

Although we in the hammocks were quite safe, the fort was trembling; many of the saddles and bags had been displaced by the sheer pressure of the enemy. Our few miserable firearms appeared to have no more effect than so many pop-guns, although the ground was becoming strewn with the bodies of the slain and disabled. At last I succeeded in getting the men in the hammocks to fire volleys at a given place, and after a time this appeared to have an effect, for as suddenly as the attack commenced, so it ceased; and the animals withdrew simultaneously and in silence.

The Don (his voice chuckling with glee) called to us to get ready again as they would probably return. "Ah!" said he to me, in a low voice, "what a splendid time we are having!" I thought, however, of the men in the fort, one of whom was stanching blood from his wrist. I told the Don to go and reinforce them; but suddenly the Don became very deaf; he was very snug in his hammock and really could not hear me; but José, like a good fellow, got out, ran for the fort, jumped in, and helped the men to make good the damages. We could still hear the pigs in the bush, and presently, without a moment's warning, we again heard that diabolical crash of teeth from a complete circle around us, followed immediately by another wild charge, and the battle was again renewed with all its excitement; but then, after the first flush of excitement, we became cooler, and José in the fort was a host in himself; this attack was of much shorter duration, and the enemy once more suddenly retreated. In the pause that then ensued I thought of Rodrigues, as it then occurred to me that I had not hitherto noticed him; his hammock was quite still, and its edges drawn together over his body that

formed a round, ball-like protuberance in the centre. I saw it all, and could picture the poor terror-stricken man, coiled up, with blanched face and bated breath and making himself as small as possible. The men in the fort had behaved very pluckily.

Six or seven other attacks eventually followed, but each one became weaker, and at intervals between of longer duration. The eventful night seemed interminable, and finally it was not until near daybreak that we heard the last grunt.

At the first lights of gray dawn José proposed to reconnoitre, and went off for the purpose. At first he proceeded very gingerly from tree to tree. I proposed to myself to go also, but just at that moment I had a fellow-feeling for the Don's deafness, and thought what a comfortable place a hammock was, and that really I could do no good; and further I remembered that generals should always occupy high, commanding positions; every one was chary of moving from their places of security.

José soon afterwards returned, and reported that the enemy had finally withdrawn.

Thoughts of the horses and mules then occurred to us, and we anxiously awaited their arrival, for they had acquired the habit of appearing in camp of their own accord in the early morning for their matutinal feed of corn. Thankfully I saw three or four soon after arrive, but two men had to go for the others, that were fortunately found browsing on a plentiful supply of the shoots of young bamboos. Happily the animals had been pasturing in a direction opposite to that from whence the peccaries came, otherwise there would have been a stampede.

Almost the first thing the men did after the final retreat of the peccaries was to slash the skin on the top of the loins of the defunct enemy, and extract the gland that

creates the disgusting odor peculiar to these animals; for if not extracted soon after death, it taints the flesh to such an extent as to render it uneatable except by Indians, who do not object to any flavor, and eat all their animal food cooked on the same principle as a European cook prepares a woodcock. There were twenty-seven dead pigs found in and about the camp, and also several wounded, to whom it was necessary to give the *coup de grâce*. The wounds were mostly from the knives and small axes, but a very considerable number of the wounded must have got away to recover, or linger unfortunately in pain.

Six of the plumpest were selected for drying and salting, the preparations for which, and also to repair the damages done to the bags of provisions, delayed our departure for some time.

An examination of these animals showed them to be a species of peccary resembling that known as the *Dicotyles labiatus*, but an essential difference was noticeable in the absence of the white lips that give the name to that species; our enemies had black snouts and dark lips, otherwise they corresponded in other points.

They had four incisors on the upper jaw, and six molars on each side above and below; while the tusks, although smaller than a pig's, are much finer and sharper, inclined slightly backward, and closely overlap each other. Some of the bodies of the animals measured thirty-six inches in length. They are more slender in build than the common pig, and covered with long, stiff bristles, colored with alternate rings of grey, light-brown, and black. These colors vary with the size and age of the animals, and as either one predominates, they cause the animal to appear either brown, gray, or black; the largest we found was almost entirely black, whereas the smallest had quite a brown appearance.

During the battle I could not help noticing the apparent

method of their movements, as though they were led by chiefs. It appears that their mode of attack on such an occasion as they favored us with is to surround in silence, by a complete circle, the object to be stormed; when, at a given signal, a simultaneous snapping of teeth takes place, followed by a general converging rush to the centre, whereby the largest and strongest reach the front first, and the smallest bring up the rear; their retreat is carried out on an equally methodical system. There is a small, red species known by the Guarany name of *caëitatu*;* our friends are known by the Brazilian cognomen of *queixadas*, or *porcos de matto*.

From what I had witnessed during the past night, I can quite understand how these courageous animals in large numbers are capable of surrounding and destroying a powerful jaguar; and if my dog Feroz had fallen among them, he would doubtless have made a brave fight, but he would not have had the slightest chance of escape, and fortunately for us the ropes of the hammocks did not break, as hammock-strings will sometimes do at untoward moments, otherwise I should not be here now to tell this tale.

But now, from the camp-fire, comes the odor of roast peccary, for parts of them were already roasting for breakfast, and emitting a vastly more acceptable odor to what they did when alive. When ready, it is needless to say that, after the long night and in the keen, dewy morning air, how appreciated were our visitors when cooked, and there was not the slightest trace of the objectionable odor.

[Shortly afterwards the hunters met another tenant of the Brazilian wilds.]

As several peccaries had crossed our path lately, José and the Don cut three long straight bamboos; to the ends

* *Dicotyles torquatos*.

of each we fastened our sharp-pointed knives, for the purpose of pig-sticking. But the first use we had for our lances was for a different animal; our dogs had suddenly disappeared into the tall grass, barking loudly, and a few moments afterwards a huge ant-bear came rolling out into the open semi-marsh land, followed by the dogs; it went at a good pace, but with most extraordinary and ludicrous movements. It became then very interesting to watch the sagacity of the dogs, as they hung well on to his rear, trying to seize only the tail of the animal, and keeping well out of reach of his powerful fore-legs armed with tremendous claws. The dogs, however, were evidently losing their caution and getting closer, and the cumbersome beast had already made some particularly rapid blows in attempting to rip the dogs. Fearing a possible disaster to my faithful Feroz, we galloped on, but it is amazing the speed these cumbersome ant-bears can develop. We had to put our animals to their sharpest paces to come up with the quarry, when we had the opportunity of fleshing our lances. The bear died hard, lying on its back and striking out with its forelegs. The men cut portions of the flesh to eat, but when afterwards prepared, I found it too strongly flavored with formic acid to be agreeable, and the dogs refused it.

It then occurred to me that the incident of the discovery by the Don of the robbery of a bees'-nest some days ago might possibly be explained by it having been taken by an ant-bear, and not by a prowling stranger as he supposed.

[The hunt of the ant-bear was followed a few days afterwards by a peccary-hunt, which proved a much less safe occupation.]

A little farther on, in a wide shallow depression, was our host's favorite hunting-ground (where he had often found

considerable quantities of peccaries), an immense *burityzal* that extended apparently from the Chapadas to the Rio Preto.

We halted at José's request and listened, and soon distinctly heard the grunt of the *porcos* among the *buritys*, where they feed on the fruits of the palms that form their favorite food.

Leaving the horses fastened to the trees of a thin *cerrado* that covered the sloping ground of the borders of the swamps, and haversacks, *ponchos*, and other *impedimenta* suspended to the branches, we advanced to the attack.

I confessed to a feeling of trepidation and a certain bumping of the heart as we were about to leave the borders of the convenient trees so easy and apparently purposely constructed for a human retreat from the peccaries, but at that moment a troop of some dozen of them emerged from the jungle of the swamp out into the open marshy land, and disappeared into the adjoining tall grass.

Three of the sons of José, with Antonio, Bob, and José Grosso, started at a run to cut off their retreat, and soon disappeared amidst the tall grass a little lower down the hill. After a few moments of suspense, we heard reports of guns, and shouts to us to look out; at the same time another troop of peccaries appeared on the open marshes, and followed the tracks of the others. The grass became agitated by the movements of the animals, and they soon afterwards entered the more open ground of the *cerrado* where we were waiting, pursued by the five men; we all fired, but as the range was long, there was not much execution. The animals, about forty in number, now suddenly halted and faced their pursuers with vicious little stampings of feet and snapping of teeth, and suddenly charged down upon the men and upon ourselves. Never was such gymnastic agility display as in the way that each of us rushed

for, and scurried up, the nearest trees, many dropping their guns or knives in their hurry.

José and his sons were the coolest, especially the old man, who, perhaps a little too stiff for climbing, calmly placed his back against a tree, clasped it with his left hand, and leaning forward in a semi-stooping posture, with his long *facão* at the ready, awaited the furious charge.

How gallantly they come sweeping along with their muzzles well down, but within a few feet of our trees they suddenly halt, and, snapping their tusks, make short plunging charges. I had found a comfortable perch up a short gnarled tree, and taking careful aim at the peccaries near me, I knocked over three of them in five shots from my revolver.

They were charging José's legs at close quarters, but his long, keen, sharp pointed knife flashes quickly as he rapidly delivers cuts and thrusts with telling effect. The other men, safely ensconced in the trees, have made good shots, but before any of us can reload the peccaries scamper away. All of us quickly descend from our perches and rush after the retreating animals, loading our guns as we run, but our brave foes suddenly halt and face us with a look of defiance, and again make a gallant charge. How ignominious we appeared as we in our turn beat a hurried retreat to the nearest trees, where, not having time or finding conveniences for a climb, we were forced to imitate José's example and face the enemy with knives; but the peccaries after a momentary pause, dashed onward and disappeared amidst the tall grass of the borders of the swamps, crossed the marshes, and entered the jungle of the *buritys*.

Although the whole thing happened within a few moments, there were quite enough elements of danger to spice the sport, for, if in making our retreat any of us had

stumbled and fallen, the consequences must have been serious, if not fatal. I prefer the pig-sticking on mule-back with our extemporized spears. We gave the *coup de grâce* to the wounded, but many got away only partially damaged. We found our bag amounted to ten pigs, all in excellent condition.

As José and his sons were anxious for another tussle, we proceeded up the valley, and soon saw here and there a solitary grunter outside the growth of palms and aquatic vegetation of the swamps; and frequent grunts, heard amidst the groves, indicated the presence of considerable numbers of our foes.

A little farther on, a spit of firm land, only covered with short grass, extended to near the groves, but no one cared to venture so far from the friendly sanctuary of the trees and possibly meet a huge anaconda coiled up in the swamp.

José Grosso and one of our host's sons now returned to remain with the animals, whilst we proceeded a little farther on in quest of a stray peccary. We walked about a mile, but found not what we hoped for; but on returning some peccaries were seen straying towards the hills in twos or threes, homeward-bound to their lairs in the dells and grottos of the sources of streams at the foot of the bluffs of the Chapadas. We worked our way amidst the trees, and eventually obtained a few long shots, and succeeded in bagging two more.

It became a question whether we should pursue our journey to enable me to take my notes, and camp out and have another probable night-attack of peccaries, or return to Matto Grande. I thought a night of peace and quietness preferable, although perhaps very unsportsmanlike, and so we wended our way homeward.

It is rather unusual that these peccaries make such a

brave fight in daylight, but it was chiefly owing to their accidentally finding themselves in such considerable numbers on this occasion, as they are commonly scattered over their feeding-grounds in very small parties during the day, and return to a common haunt at night, whence they sally out in immense numbers upon any foe that trespasses upon their neighborhood, like when they tracked our dogs in the Sapão.

THE PERILS OF TRAVEL.

IDA PFEIFFER.

[Among travellers there have been few more ardent and enterprising than the woman from whose writings our present selection is made. Ida Pfeiffer was born in Vienna about 1795, married, brought up and educated her two sons, and in 1842, when nearly fifty years of age, set out on a series of travels which she had long contemplated, and in which she spent the succeeding ten years. After a series of travels in Asia Minor, Scandinavia, and Iceland, she set out in 1846 on a tour of the world, which was not accomplished without great hardships and dangers. In 1851 she entered on a second journey around the world, visiting various new countries. She died in 1858. From her "*A Woman's Journey round the World*" we select the following thrilling experience. She had set out from Rio Janeiro, in company with Count Berchthold, on an excursion to Petropolis, a German colony in the vicinity. Suddenly, in a lonely spot, a negro sprang out upon them, knife and lasso in hand, indicating by gestures that he intended to murder them and drag their bodies into the forest. She gives a vivid description of what followed.]

WE had no arms, as we had been told that the road was perfectly safe, and the only weapons of defence which we possessed were our parasols, if I except a clasped knife, which I instantly drew out of my pocket and opened, fully determined to sell my life as dearly as possible. We parried our adversary's blows as long as we could with our



BOTANICAL GARDEN, RIO JANEIRO.

parasols, but these lasted but a short time; besides, he caught hold of mine, which, as we were struggling for it, broke short off, leaving only a piece of the handle in my hand. In the struggle, however, he dropped his knife, which rolled a few steps from him; I instantly made a dash, and thought I had got it, when he, more quick than I, thrust me away with his feet and hands, and once more obtained possession of it. He waved it furiously over my head, and dealt me two wounds, a thrust and a deep gash, both in the upper part of the left arm; I thought I was lost, and despair alone gave me the courage to use my own knife. I made a thrust at his breast; this he warded off, and I only succeeded in wounding him severely in the hand. The Count sprang forward and seized the fellow from behind, and thus afforded me an opportunity of raising myself from the ground. The whole affair had not taken more than a few seconds.

The negro's fury was now roused to its highest pitch by the wounds he had received. He gnashed his teeth at us like a wild beast, and flourished his knife with frightful rapidity. The Count, in his turn, had received a cut right across the hand, and we had been irrevocably lost, had not Providence sent us assistance. We heard the tramp of horses' hoofs upon the road, upon which the negro instantly left us and sprang into the wood. Immediately afterwards two horsemen turned a corner of the road, and we hurried towards them; our wounds, which were bleeding freely, and the way in which our parasols were hacked, soon made them understand the state of affairs. They asked us which direction the fugitive had taken, and, springing from their horses, hurried after him; their efforts, however, would have been fruitless, if two negroes, who were coming from the opposite side, had not helped them. As it was, the fellow was soon captured.

He was pinioned, and, as he would not walk, severely beaten, most of the blows being dealt upon the head, so that I feared the poor fellow's skull would be broken. In spite of this, he never moved a muscle, and lay, as if insensible to feeling, upon the ground. The two other negroes were obliged to seize hold of him, when he endeavored to bite every one within his reach like a wild beast, and carry him to the nearest house. Our preservers, as well as the Count and myself, accompanied them. We then had our wounds dressed, and afterwards continued our journey, not, it is true, entirely devoid of fear, especially when we met one or more negroes, but without any further mishap, and with a continually increasing admiration of the beautiful scenery.

[The negro was supposed to be either drunk or insane, but it proved that he had been punished by his master for some offence, and took that mode to obtain revenge. Madame Pfeiffer penetrated the Brazilian forests, and thus describes the aboriginal savages.]

On a small space, under lofty trees, five huts, or rather sheds, formed of leaves, were erected, eighteen feet long by twelve feet broad. The frames were formed of four poles stuck in the ground, with another reaching across, and the roof of palm-leaves, through which the rain could penetrate with the utmost facility. On three sides these bowers were entirely open. In the interior hung a hammock or two, and on the ground glimmered a little fire, under a heap of ashes, in which a few roots, Indian corn, and bananas were roasting. In one corner, under the roof, a small supply of provisions was hoarded up, and a few gourds were scattered around; these are used by the savages instead of plates, pots, water-jugs, etc. The long-bows and arrows, which constitute their only weapons, were leaning in the background against the wall.

I found the Indians still more ugly than the negroes. Their complexion is a light bronze, they are stunted in stature, well-knit, and about the middle size. They have broad and somewhat compressed features, and thick, coal-black hair, hanging straight down, which the women sometimes wear in plaits, fastened to the back of the head, and sometimes falling down loose about them. Their forehead is broad and low, the nose somewhat flattened, the eyes long and narrow, almost like those of the Chinese, and the mouth large, with rather thick lips. To give a still greater effect to all these various charms, a peculiar look of stupidity is spread over the whole face, and is more especially to be attributed to the way in which their mouths are always kept open. Most of them, both men and women, were tattooed with a reddish or blue color, though only round the mouth, in the form of a moustache. Both sexes are passionately fond of smoking, and prefer brandy to everything. Their dress was composed of a few rags, which they had fastened round their loins.

The good creatures offered me the best hut they possessed, and invited me to pass the night there. Being rather fatigued by the toilsome nature of my journey on foot, the heat, and the hunting-excursion, I very joyfully accepted their proposition; the day, too, was drawing to a close, and I should not have been able to reach the settlement of the whites before night. I therefore spread out my cloak upon the ground, arranged a log of wood so as to serve instead of a pillow, and for the present seated myself upon my splendid couch. In the mean while my hosts were preparing the monkey and the parrots, by sticking them on wooden spits and roasting them before the fire.

In order to render the meal a peculiarly dainty one, they also buried some Indian corn and roots in the cinders. They then gathered a few large fresh leaves off the trees,

tore the roasted ape into several pieces with their hands, and, placing a large portion of it, as well as a parrot, Indian corn, and some roots, upon the leaves, put it before me. My appetite was tremendous, seeing that I had tasted nothing since the morning. I therefore immediately fell to upon the roasted monkey, which I found superlatively delicious; the flesh of the parrot was far from being so tender and palatable.

[As we have begun this selection with a perilous adventure of our lady traveller, some other perils encountered by her in other parts of the world may fitly close it. The following experience in a tiger-hunt took place in India, during an excursion to the rock temples of Ellora.]

I had scarcely left the gates of the town behind, when I perceived a number of Europeans seated upon elephants, coming from the bungalow. On meeting each other we pulled up and commenced a conversation. The gentlemen were on the road to search for a tiger-lair, of which they had received intimation, and invited me, if such a sport would not frighten me too much, to take part in it. I was greatly delighted to receive the invitation, and was soon seated on one of the elephants, in a howdah about two feet high, in which there were already two gentlemen and a native,—the latter had been brought to load the guns. They gave me a large knife to defend myself, in case the animal should spring too high and reach the side of the howdah. Thus prepared, we approached the chain of hills, and after a few hours we were already pretty near the lair of the tigers, when our servants cried out softly, "*Bach, Bach!*" and pointed with their fingers to some brushwood.

I had scarcely perceived the flaming eyes which glared out of one of the bushes before shots were fired. Several balls took effect upon the animal, who rushed, maddened, upon us. He made such tremendous springs, that I

thought every moment he must reach the howdah, and select a victim from among us. The sight was terrible to see, and my apprehensions were increased by the appearance of another tiger; however, I kept myself so calm, that none of the gentlemen had any suspicion of what was going on in my mind. Shot followed shot; the elephants defended their trunks with great dexterity by throwing them up or drawing them in. After a sharp contest of half an hour, we were the victors, and the dead animals were triumphantly stripped of their beautiful skins. The gentlemen politely offered me one of them as a present; but I declined accepting it, as I could not postpone my journey sufficiently long for it to be dried.

[Madame Pfeiffer had a courage and presence of mind in dangerous and difficult situations which often served her in good stead. Certainly it needed no slight courage to undertake the adventure described in our next selection, a journey among the cannibal Battakers of Sumatra. In 1835 two American missionaries had been killed and eaten by them, and such a journey without a military escort seemed foolhardy. But she persisted, and reached a village on the borders of the Battaker territory July 19, 1852. Here she sent for the regents of the neighboring villages.]

In the evening we sat in solemn conclave surrounded by regents, and by a great crowd of the people, for it had been noised abroad far and wide that here was a white woman who was about to venture into the dreaded country of the wild Battakers. Regents and people all concurred in advising me to renounce so perilous a project; but I had tolerably made up my mind on this point, and I only wanted to be satisfied as to one thing,—namely, whether it was true, as many travellers asserted, that the Battakers did not put their victims out of their pain at once, but tied them living to stakes, and, cutting pieces off them, consumed them by degrees with tobacco and salt.

The idea of this slow torture did a little frighten me; but my hearers assured me, with one accord, that this was only done to those who were regarded as criminals of a deep dye, and who had been on that account condemned to death. Prisoners of war are tied to a tree and beheaded at once; but the blood is carefully preserved for drinking, and sometimes made into a kind of pudding with boiled rice. The body is then distributed; the ears, the nose, and the soles of the feet are the exclusive property of the rajah, who has besides a claim on other portions. The palms of the hands, the soles of the feet, the flesh of the head, and the heart and liver, are reckoned peculiar delicacies, and the flesh in general is roasted and eaten with salt. The regents assured me, with a certain air of relish, that it was very good food, and that they had not the least objection to eat it. The women are not allowed to take part in these grand public dinners. A kind of medicinal virtue is ascribed to trees to which prisoners have been tied when they have been put to death, and the stem is usually cut into sticks five or six feet long, carved into figures or arabesques, and decorated with human hair; and these sticks are taken in hand by people who go to visit the sick, or when any medicine is to be given.

[Despite this gruesome warning the daring woman continued her journey, and prosecuted it until the 13th of August, when she found herself in the most imminent peril.]

More than eighty armed men stood in the pathway and barred our passage, and before we were aware of it, their spearmen had formed a circle around me and shut me in, looking the while indescribably terrible and savage. They were tall robust men, fully six feet high; their features showed the most violent agitation, and their huge mouths and projecting teeth had really more resemblance to the

jaws of a wild beast than to anything human. They yelled and made a dreadful noise about me, and had I not been in some measure familiar with such scenes, I should have felt sure that my last hour was at hand.

I was really uneasy, however: the scene was too frightful; but I never lost my presence of mind. At first I sat down on a stone that lay near, endeavoring to look as composed and confident as I could; but some rajahs then came up to me with very threatening looks and gestures, and gave me clearly to understand that if I did not turn back they would kill and eat me. Their words, indeed, I did not comprehend, but their action left no manner of doubt, for they pointed with their knives to my throat, and gnashed their teeth at my arm, moving their jaws then as if they already had them full of my flesh.

Of course, when I thought of coming among the wild Battakers, I had anticipated something of this sort, and I had therefore studied a little speech in their language for such an occasion. I knew if I could say anything that would amuse them, and perhaps make them laugh, I would have a great advantage over them, for savages are quite like children, and the merest trifle will often make them friends. I got up, therefore, and patting one of the most violent, who stood next me, upon the shoulder in a friendly manner, said, with smiling face, in a jargon half Malay and half Battaker, "Why, you don't mean to say you would kill and eat a woman, especially such an old one as I am! I must be very hard and tough!" And I also gave them by signs and words to understand that I was not at all afraid of them, and was ready, if they liked, to send back my guide, if they would only take me as far as the *Eier-Tau*.

Fortunately for me, the doubtless very odd way in which I pronounced their language, and my pantomime, diverted

them, and they began to laugh. Perhaps, also, the fearless confidence which I manifested made a good impression; they offered me their hands, the circle of spearmen opened, and, rejoicing not a little at having escaped this danger, I journeyed on, and reached in perfect safety a place called Tugala, where the rajah received me into his house.

BRAZILIAN ANTS AND MONKEYS.

HENRY W. BATES.

[The "Naturalist in the Amazons" of Henry Walter Bates is a work that has long held a deserved reputation for the closeness and accuracy of its observations and the interest of its narrative. The author, born at Leicester, England, in 1825, accompanied the noted biologist, Alfred Russell Wallace, to Brazil, the story of which journey is given in the work cited. From it we extract some passages concerning the animal life of that country, embracing the doings of the "leaf-cutting" ants and the monkeys. Our selections begin in the suburbs of Pará.]

IN the gardens numbers of fine showy butterflies were seen. There were two swallow-tailed species, similar in colors to the English *Papilio machaon*, a white *Pieris* (*P. monuste*), and two or three species of brimstone- and orange-colored butterflies, which do not belong, however, to the same genus as our English species. In weedy places a beautiful butterfly with eye-like spots on its wings was common, the *Junonia lavinia*, the only Amazonian species which is at all nearly related to our Vanessas, the Admiral and Peacock butterflies.

One day we made our first acquaintance with two of the most beautiful productions of nature in this department,—namely, the *Helicopis cupido* and *endymion*. A little be-

yond our house one of the narrow green lanes which I have already mentioned diverged from the mongabu avenue, and led between enclosures overrun with a profusion of creeping plants and glorious flowers down to a moist hollow, where there was a public well and a picturesque nook, buried in a grove of mucajá palm-trees. On the tree-trunks, walls, and palings grew a great quantity of climbing Pothos plants, with large, glossy, heart-shaped leaves. These plants were the resort of these two exquisite species, and we captured a great number of specimens. They are of extremely delicate texture. The wings are cream-colored; the hind pair have several tail-like appendages, and are spangled beneath as if with silver. Their flight is very slow and feeble; they seek the protected under surface of the leaves, and in repose close their wings over the back, so as to expose the brilliantly spotted under surface.

I will pass over the many orders and families of insects, and proceed at once to the ants. These were in great numbers everywhere, but I will mention here only two kinds. We were amazed at seeing ants an inch and a quarter in length, and stout in proportion, marching in single file through the thickets. These belonged to the species called *Dinoponera grandis*. Its colonies consist of a small number of individuals, and are established about the roots of slender trees. It is a stinging species, but the sting is not so severe as in many of the smaller kinds. There was nothing peculiar or attractive in the habits of this giant among the ants. Another far more interesting species was the Saüba (*Ecodoma cephalotes*). This ant is seen everywhere about the suburbs, marching to and fro in broad columns. From its habit of despoiling the most valuable cultivated trees of their foliage, it is a great scourge to the Brazilians. In some districts it is so abun-

dant that agriculture is almost impossible, and everywhere complaints are heard of the terrible pest. . . .

In our first walks we were puzzled to account for large mounds of earth, of a different color from the surrounding soil, which were thrown up in the plantations and woods. Some of them were very extensive, being forty yards in circumference, but not more than two feet in height. We soon ascertained that these were the work of the *Saübas*, being the outworks or domes which overlie and protect the entrances to their vast subterranean galleries. On close examination I found the earth of which they are composed to consist of very minute granules, agglomerated with cement, and forming many rows of little ridges and turrets. The difference in color from the superficial soil of the vicinity is owing to their being formed of the under-soil, brought up from a considerable depth.

It is very rarely that the ants are seen at work on these mounds; the entrances seem to be generally closed; only now and then, when some particular work is going on, are the galleries opened. The entrances are small and numerous; in the larger hillocks it would require a great amount of excavation to get at the main galleries; but I succeeded in removing portions of the dome in smaller hillocks, and then I found that the minor entrances converged, at the depth of about two feet, to one broad, elaborately worked gallery or mine, which was four or five inches in diameter.

The habit in the *Saüba* ant of clipping and carrying away immense quantities of leaves has long been recorded in books on natural history. When employed on this work their processions look like a multitude of animated leaves on the march. In some places I found an accumulation of such leaves, all circular pieces, about the size of a sixpence, lying on the pathway, unattended by ants, and at some distance from the colony. Such heaps are always found

to be removed when the place is revisited the next day. In course of time I had plenty of opportunities of seeing them at work. They mount the trees in multitudes, the individuals being all worker-miners. Each one places itself on the surface of a leaf, and cuts with its sharp, scissor-like jaws, and by a sharp jerk detaches the piece. Sometimes they let the leaf drop to the ground, where a little heap accumulates until carried away by another relay of workers; but generally each marches off with the piece it has operated upon, and, as all take the same road to their colony, the path they follow becomes in a short time smooth and bare, looking like the impression of a cart-wheel through the herbage.

It is a most interesting sight to see the vast host of busy diminutive laborers occupied on this work. Unfortunately, they choose cultivated trees for their purpose. This ant is quite peculiar to tropical America, as is the entire genus to which it belongs. It sometimes despoils the young trees of species growing wild in its native forests; but it seems to prefer, when within reach, plants imported from other countries, such as the coffee- and orange-trees. . . . The heavily-laden workers, each carrying its segment of leaf vertically, the lower edge secured in its mandibles, troop up and cast their burdens on the hillock; another relay of laborers place the leaves in position, covering them with a layer of earthy granules, which are brought one by one from the soil beneath.

The underground abodes of this wonderful ant are known to be very extensive. The Rev. Hamlet Clark has related that the *Saüba* of Rio de Janeiro, a species closely allied to ours, has excavated a tunnel under the bed of the river Parahyba at a place where it is as broad as the Thames at London Bridge. At the Magoary rice-mills, near Pará, these ants once pierced the embankment of a

large reservoir; the great body of water which it contained escaped before the damage could be repaired. In the Botanic Gardens at Pará an enterprising French gardener tried all he could think of to extirpate the Saüba. With this object he made fires over some of the main entrances to their colonies, and blew the fumes of sulphur down the galleries by means of bellows. I saw the smoke issue from a great number of outlets, one of which was seventy yards distant from the place where the bellows were used. This shows how extensively the underground galleries are ramified.

Besides injuring and destroying young trees by despoiling them of their foliage, the Saüba ant is troublesome to the inhabitants from its habit of plundering the stores of provisions in houses at night, for it is even more active at night than in the daytime. At first I was inclined to discredit the stories of their entering habitations and carrying off grain by grain the farinha or mandioca meal, the bread of the poorer classes of Brazil. At length, while residing at an Indian village on the Tapajos, I had ample proof of the fact. One night my servant woke me three or four times before sunrise by calling out that the rats were robbing the farinha baskets. The article at that time was scarce and dear. I got up, listened, and found the noise very unlike that made by rats. So I took the light and went into the store-room, which was close to my sleeping-place. I there found a broad column of Saüba ants, consisting of thousands of individuals, as busy as possible, passing to and fro between the door and my precious baskets. Most of those passing outward were laden each with a grain of farinha, which was, in some cases, larger and many times heavier than the bodies of the carriers.

Farinha consists of grains of similar size and appearance to the tapioca of our shops; both are products of the same

root, tapioca being the pure starch, and farinha the starch mixed with woody fibre, the latter ingredient giving it a yellowish color. It was amusing to see some of the dwarfs, the smallest members of their family, staggering along, completely hidden under their load. The baskets, which were on a high table, were entirely covered with ants, many hundreds of whom were employed in snipping the dry leaves which served as lining. This produced the rustling sound which had at first disturbed us. My servant told me that they would carry off the whole contents of the two baskets (about two bushels) in the course of the night if they were not driven off, so we tried to exterminate them by killing them with our wooden clogs. It was impossible, however, to prevent fresh hosts coming in as fast as we killed their companions. They returned the next night, and I was then obliged to lay trains of gunpowder along their line and blow them up. This, repeated many times, at last seemed to intimidate them, for we were free from their visits during the remainder of my residence at the place.

What they did with the hard dry grains of mandioca I was never able to ascertain, and cannot even conjecture. The meal contains no gluten, and therefore would be useless as cement. It contains only a small relative portion of starch, and, when mixed with water, it separates and falls away like so much earthy matter. It may serve as food for the subterranean workers. But the young or larvæ of ants are usually fed by juices secreted by the worker-nurses.

[Leaving the ants with this example of their curious habits, we shall proceed with the author's description of Brazilian monkeys.]

I have already mentioned that monkeys were rare in the immediate vicinity of Pará. I met with three species

only in the forest near the city; they are shy animals and avoid the neighborhood of towns, where they are subject to much persecution by the inhabitants, who kill them for food. The only kind which I saw frequently was the little *Midas ursulus*, one of the Marmosets, a family peculiar to tropical America, and differing in many essential points of structure and habits from all other apes. They are small in size, and more like squirrels than true monkeys in their manner of climbing. The nails, except those of the hind thumbs, are long and claw-shaped like those of squirrels, and the thumbs of the fore extremities, or hands, are not opposable to the other fingers. I do not mean to convey that they have a near relationship to squirrels, which belong to the Rodents, an inferior order of mammals; their resemblance to those animals is merely a superficial one. They have two molar teeth less in each jaw than the Cebidæ, the other family of American monkeys; they agree with them, however, in the sideway position of the nostrils, a character which distinguishes both from all the monkeys of the Old World. The body is long and slender, clothed with soft hairs, and the tail, which is nearly twice the length of the trunk, is not prehensile. The hind limbs are much larger in volume than the anterior pair.

The *Midas ursulus* is never seen in large flocks; three or four is the greatest number observed together. It seems to be less afraid of the neighborhood of man than any other monkey. I sometimes saw it in the woods which border the suburban streets, and once I espied two individuals in a thicket behind the English consul's house at Nazareth. Its mode of progression along the main boughs of the lofty trees is like that of squirrels; it does not ascend to the slender branches, or take those wonderful flying leaps which the Cebidæ do, whose prehensile tails and flexible hands fit them for such headlong travelling.

It confines itself to the larger boughs and trunks of trees, the long nails being of great assistance to the creature, enabling it to cling securely to the bark; and it is often seen passing rapidly round the perpendicular cylindrical trunks. It is a quick, restless, timid little creature, and has a great share of curiosity, for when a person passes by under the trees along which a flock is running, they always stop for a few moments to have a stare at the intruder.

In Pará *Midas ursulus* is often seen in a tame state in the houses of the inhabitants. When full grown it is about nine inches long, independently of the tail, which measures fifteen inches. The fur is thick, and black in color, with the exception of a reddish-brown streak down the middle of the back. When first taken, or when kept tied up, it is very timid and irritable. It will not allow itself to be approached, but keeps retreating backward when any one attempts to coax it. It is always in a querulous humor, uttering a twittering, complaining noise; its dark, watchful eyes, expressive of distrust, observant of every movement which takes place near it. When treated kindly, however, as it generally is in the houses of the natives, it becomes very tame and familiar. I once saw one as playful as a kitten, running about the house after the negro children, who fondled it to their heart's content. It acted somewhat differently towards strangers, and seemed not to like them to sit in the hammock which was slung in the room, leaping up, trying to bite, and otherwise annoying them.

It is generally fed on sweet fruits, such as the banana, but it is also fond of insects, especially soft-bodied spiders and grasshoppers, which it will snap up with eagerness when within reach. The expression of countenance in these small monkeys is intelligent and pleasing. This is partly owing to the open facial angle, which is given as one of sixty degrees; but the quick movements of the head, and

the way they have of inclining it to one side when their curiosity is excited, contribute very much to give them a knowing expression. Anatomists who have dissected species of *Midas* tell us that the brain is of a very low type as far as the absence of convolutions goes, the surface being as smooth as that of a squirrel's. I should conclude at once that this character is an unsafe guide in judging of the mental qualities of these animals; in mobility of expression of countenance, intelligence, and general manners these small monkeys resemble the higher apes far more than they do any rodent animal with which I am acquainted.

On the upper Amazon I once saw a tame individual of the *Midas leoninus*, a species first described by Humboldt, which was still more playful and intelligent than the one just described. This rare and beautiful little monkey is only seven inches in length, exclusive of the tail. It is named *leoninus* on account of the long brown mane which depends from the neck, and which gives it very much the appearance of a diminutive lion. In the house where it was kept it was familiar with every one; its greatest pleasure seemed to be to climb about the bodies of different persons who entered. The first time I went in, it ran across the room straightway to the chair on which I sat down and climbed up to my shoulder; arrived there, it turned round and looked into my face, showing its little teeth, and chattering, as though it would say, "Well, and how do you do?" It showed more affection towards its master than towards strangers, and would climb up to his head a dozen times in the course of an hour, making a great show every time of searching there for certain animalcula.

Isidore Geoffrey St. Hilaire relates of a species of this genus that it distinguished between different objects de-

picted on an engraving. M. Audouin showed it the portraits of a cat and a wasp; at these it became much terrified; whereas at the sight of a figure of a grasshopper or beetle it precipitated itself on the picture, as if to seize the objects there represented.

Although monkeys are now rare in a wild state near Pará, a great number may be seen semi-domesticated in the city. The Brazilians are fond of pet animals. Monkeys, however, have not been known to breed in captivity in this country. I counted in a short time thirteen different species while walking about the Pará streets, either at the doors or windows of houses, or in the native canoes. Two of them I did not meet with afterwards in any other part of the country. One of these was the well known *Hapale jacchus*, a little creature resembling a kitten, banded with black and gray all over the body and tail, and having a fringe of long white hairs surrounding the ears. It was seated on the shoulder of a young mulatto girl, as she was walking along the street, and I was told had been captured in the island of Marajo. The other was a species of Cebas, with a remarkably large head. It had ruddy brown fur, paler on the face, but presenting a blackish tuft on the top of the forehead. . . .

The only monkeys I observed at Cametá were the Couxio (*Pithecia satanas*), a large species, clothed with long brownish black hair, and the tiny *Midas argentatus*. The Couxio has a thick bushy tail; the hair of the head sits on it like a cap, and looks as if it had been carefully combed. It inhabits only the most retired parts of the forest, on the terra firma, and I observed nothing of its habits. The little *Midas argentatus* is one of the rarest of the American monkeys. I have not heard of its being found anywhere except near Cametá. I once saw three individuals together running along a branch in a cacao grove near Cametá;

they looked like white kittens: in their motions they resembled precisely the *Midas ursulus* already described.

I saw afterwards a pet animal of this species, and heard that there were many so kept, and that they were esteemed as choice treasures. The one I saw was full grown, but it measured only seven inches in length of body. It was covered with long white, silky hairs, the tail was blackish, and the face nearly naked and flesh-colored. It was a most timid and sensitive little thing. The woman who owned it carried it constantly in her bosom, and no money would induce her to part with her pet. She called it Mico. It fed from her mouth and allowed her to fondle it freely, but the nervous little creature would not permit strangers to touch it. If any one attempted to do so it shrank back, the whole body trembling with fear, and its teeth chattered, while it uttered its tremulous frightened tones. The expression of its features was like that of its more robust brother *Midas ursulus*; the eyes, which were black, were full of curiosity and mistrust, and it always kept them fixed on the person who attempted to advance towards it.

In the orange groves and other parts humming-birds were plentiful, but I did not notice more than three species. I saw a little pigmy belonging to the genus *Phæthornis* one day in the act of washing itself in a brook. It was perched on a thin branch, whose end was under water. It dipped itself, then fluttered its wings and pruned its feathers, and seemed thoroughly to enjoy itself alone in the shady nook which it had chosen,—a place overshadowed by broad leaves of ferns and *Heliconiæ*. I thought as I watched it that there was no need for poets to invent elves and gnomes while nature furnishes us with such marvellous little sprites ready to hand.

THE MONARCHS OF THE ANDES.

JAMES ORTON.

[The story of the Andes and the great river to which this mountain-chain gives birth has never been better told than in Orton's "The Andes and the Amazon," from whom we select the following description of Chimborazo and its mountain neighbors. James Orton, born at Seneca Falls, New York, in 1830, became a Congregationalist clergyman, and in 1867 headed an exploring expedition to South America. In 1873 he sought that continent again, and died on Lake Titicaca, September 24, 1877.]

COMING up from Peru through the cinchona forests of Loja, and over the barren hills of Assuay, the traveller reaches Riobamba seated on the threshold of magnificence,—like Damascus, an oasis in a sandy plain, but, unlike the Queen of the East, surrounded with a splendid retinue of snowy peaks that look like icebergs floating in a sea of clouds.

On our left is the most sublime spectacle in the New World. It is a majestic pile of snow, its clear outline on the deep blue sky describing the profile of a lion in repose. At noon the vertical sun, and the profusion of light reflected from the glittering surface, will not allow a shadow to be cast on any part, so that you can easily fancy the figure is cut out of a mountain of spotless marble. This is Chimborazo,—yet not the whole of it,—you see but a third of the great giant. His feet are as eternally green as his head is everlastingly white; but they are far away beneath the banana and cocoanut palms of the Pacific coast.

Rousseau was disappointed when he first saw the sea; and the first glimpse of Niagara often fails to meet one's expectations. But Chimborazo is sure of a worshipper the

moment its overwhelming grandeur breaks upon the traveller. You feel that you are in the presence-chamber of the monarch of the Andes. There is sublimity in his kingly look of which the ocean might be proud.

“ All that expands the spirit, yet appeals,
Gathers around this summit, as if to show
How earth may pierce to heaven, yet leave vain man below.”

Well do we remember our disappointment as we stood before that wonder of the world,—St. Peter's. We mounted the pyramid of steps and looked up, but were not overcome by the magnificence. We read in our guide-book that the edifice covers eight acres, and to the tip-top of the cross is almost five hundred feet; that it took three hundred and fifty years and twelve successive artists to finish it and an expenditure of fifty million dollars, and now costs thirty thousand dollars per annum to keep it in repair, still we do not appreciate its greatness. We pushed aside the curtain and walked in,—walked a day's journey across the transept and up and down the everlasting nave, and yet continued heterodox. We tried hard to believe it was very vast and sublime, and we knew we ought to feel its grandeur, but somehow we did not. Then we sat down by the 'Holy of Holies, and there we were startled into a better judgment by the astounding fact that the Cathedral of St. Paul—the largest edifice in Great Britain—could stand upright, spire, dome, body, and all, inside of St. Peter's! that the letters of the inscription which run round the *base* of the dome, though apparently but an inch, are in reality six feet high! Then for the first time the scales fell from our eyes, the giant building began to grow; higher and higher still it rose, longer and deeper it expanded, yet in perfect proportions; the colossal structure, now a living temple, put on its beautiful garments and the robe of majesty. And that

dome! the longer we looked at it the vaster it grew, till finally it seemed to be a temple not made with hands; the spacious canopy became the firmament; the mosaic figures of cherubim and seraphim were endowed with life; and as we fixed our eyes on the zenith where the almighty is represented in glory, we thought we had the vision of Stephen. Long we gazed upward into this heaven of man's creation, and gazed again till we were lost in wonder.

But the traveller needs no such steps to lift him up to the grand conception of the divine Architect as he beholds the great white dome of Chimborazo. It looks lofty from the very first. Now and then an expanse of thin, sky-like vapor would cut the mountain in twain, and the dome, islanded in the deep blue of the upper regions, seemed to belong more to heaven than to earth. We knew that Chimborazo was more than twice the altitude of Etna. We could almost see the great Humboldt struggling up the mountain's side till he looked like a black speck moving over the mighty white, but giving up in despair four thousand feet below the summit. We see the intrepid Bolivar mounting still higher; but the hero of Spanish-American independence returns a defeated man. Last of all comes the philosophic Boussingault, and attains the prodigious elevation of nineteen thousand six hundred feet,—the highest point reached by man without the aid of a balloon; but the dome remains unsullied by his foot. Yet none of these facts increase our admiration. The mountain has a tongue which speaks louder than all mathematical calculations.

There must be something singularly sublime about Chimborazo, for the spectator at Riobamba is already nine thousand feet high, and the mountain is not so elevated above him as Mont Blanc above the vale of Chamouni, when, in reality, that culminating point of Europe would not reach up even to the snow-limit of Chimborazo by two thousand

feet. It is only while sailing on the Pacific that one sees Chimborazo in its complete proportions. Its very magnificence diminishes the impression of awe and wonder, for the Andes on which it rests are heaved to such a vast altitude above the sea, that the relative elevation of its summit becomes reduced by comparison with the surrounding mountains. Its altitude is twenty-one thousand four hundred and twenty feet, or forty-five times the height of Strasburg cathedral; or, to state it otherwise, the fall of one pound from the top of Chimborazo would raise the temperature of water thirty degrees. One-fourth of this is perpetually covered with snow, so that its ancient name Chimpurazu—the mountain of snow—is very appropriate. It is a stirring thought that this mountain, now mantled with snow, once gleamed with volcanic fires. There is a hot spring on the north side, and an immense amount of *débris* covers the slope below the snow-limit, consisting chiefly of fine-grained, iron-stained trachyte and coarse porphyroid gray trachyte; very rarely a dark vitreous trachyte. Chimborazo is very likely not a solid mountain; trachytic volcanoes are supposed to be full of cavities. Bouger found it made the plumb line deviate 7" or 8".

The valleys which furrow the flank of Chimborazo are in keeping with its colossal size. Narrower, but deeper, than those of the Alps, the mind swoons and sinks in the effort to comprehend their grim majesty. The mountain appears to have been broken to pieces like so much thin crust, and the strata thrown on their vertical edges, revealing deep, dark chasms, that seem to lead to the confines of the lower world. The deepest valley in Europe, that of the Ordesa in the Pyrenees, is three thousand two hundred feet deep; but here are rents in the side of Chimborazo in which Vesuvius could be put away out of sight. As you look down into the fathomless fissure, you see a white fleck

rising out of the gulf, and expanding as it mounts, till the wings of the condor, fifteen feet in spread, glitters in the sun as the proud bird fearlessly wheels over the dizzy chasm, and then, ascending above your head, sails over the dome of Chimborazo. Could the condor speak, what a glowing description he could give of the landscape beneath him when his horizon is a thousand miles in diameter! If

“Twelve fair counties saw the blaze from Malvern’s lonely height,” what must be the panorama from a height fifteen times higher!

Chimborazo was long supposed to be the tallest mountain on the globe, but its supremacy has been supplanted by Mount Everest in Asia, and Aconcagua in Chile. In mountain gloom and glory, however, it still stands unrivalled. The Alps have the avalanche, “the thunderbolt of snow,” and the glaciers, those icy Niagaras so beautiful and grand. Here they are wanting. The monarch of the Andes sits motionless in calm serenity and unbroken silence. The silence is absolute and actually oppressive. The road from Guayaquil to Quito crosses Chimborazo at the elevation of fourteen thousand feet. Save the rush of the trade wind in the afternoon, as it sweeps over the Andes, not a sound is audible; not the hum of an insect, nor the chirp of a bird, nor the roar of the puma, nor the music of running waters. Mid-ocean is never so silent. You can almost hear the globe turning on its axis. There was a time when the monarch deigned to speak, and spoke with a voice of thunder, for the lava on its sides is an evidence of volcanic activity. But ever since the morning stars sang together over man’s creation Chimbo has sat in sullen silence, satisfied to look “from his throne of clouds o’er half the world.” There is something very suggestive in this silence of Chimborazo. It was once full of noise

and fury ; it is now a *completed* mountain, and thunders no more. How silent was Jesus, a completed character ! The reason that we are so noisy is that we are so full of wants ; we are *unfinished* characters. Had we perfect fulness of all things, the beatitude of being without a want, we should lapse into the eternal silence of God.

Chimborazo is a leader of a long train of ambitious crags and peaks ; but as he who comes after the king must not expect to be noticed, we will only take a glimpse of these lesser lights as we pass up the Western Cordillera, and then down the Eastern.

The first after leaving the monarch is Caraguairazo. The Indians call it "the wife of Chimborazo." They are separated only by a very narrow valley. One hundred and seventy years ago the top of this mountain fell in, and torrents of mud flowed out containing multitudes of fishes. It is now over seventeen thousand feet high, and is one of the most Alpine of the Quitionian volcanoes, having sharp pinnacles instead of the smooth trachytic domes—usually double domes—so characteristic of the Andean summits. And now we pass in rapid succession numerous picturesque mountains, some of them extinct volcanoes, as Iliniza, presenting two pyramidal peaks, the highest seventeen thousand feet above the sea, and Corazon, so named from its heart-shaped summit, till we reach Pichincha, whose smoking crater is only five miles distant in a straight line from the city of Quito, or eleven by the travelled route.

The crown of this mountain presents three groups of rocky peaks. The most westerly one is called Rucu-Pichincha, and alone manifests activity. To the northeast of Rucu is Guagua-Pichincha, a ruined flue of the same fiery furnace ; and between the two is Cundur-Guachana. Pichincha is the only volcano in Eucador which has not a true cone crater. Some violent eruption beyond the reach of history or tradi-

tion has formed an enormous funnel-shaped basin two thousand five hundred feet deep, fifteen hundred in diameter at the bottom, and expanding upward to a width of three-fourths of a mile. It is the *deepest* crater on the globe. That of Kilauea is six hundred feet; Orizaba, five hundred; Etna, three hundred; Hecla, one hundred. Vesuvius is a portable furnace in comparison. The abyss is girt with a ragged wall of dark trachyte, which rises on the inside at various angles between forty-five degrees and perpendicularity. As we know of but one American besides the members of our expedition (Mr. Farrand, a photographer) who has succeeded in entering the crater of this interesting volcano, we will give a brief sketch of our visit.

Leaving Quito in the afternoon by the old arched gateway at the foot of Panecillo, and crossing a spur of the mountain, we stopped for the night at the Jesuit hacienda, situated in the beautiful valley of Lloa, but nearly ruined by the earthquake of 1859. On the damp walls of this monastery, perched ten thousand two hundred and sixty-eight above the ocean, we found several old paintings, among them a copy of the *Visitation* by Rubens. The sunset views in this heart of the Andes were surpassingly beautiful. Mounting our horses at break of day, and taking an Indian guide, we ascended rapidly by a narrow and difficult path through the forest that belts the volcano up to the height of twelve thousand feet, emerging gradually into a thicket of stunted bushes, and then entered the dreary *paramo*. Splendid was the view of the Eastern Cordillera. At least six dazzling white volcanoes were in sight just across the valley of Quito, among them table-topped Cayambi, majestic Antisana, and princely Cotopaxi, whose tapering summit is a mile above the clouds. Toiling upward we reached the base of the cone where vegetation ceased entirely; and tying our horses to some huge rocks

that had fallen from the mural cliff above, we started off on hands and feet for the crater. The cone is deeply covered with sand and cinders for about two hundred feet, and the sides are inclined at an angle of about thirty-five degrees. At ten o'clock we reached the brim of the crater, and the great gulf burst suddenly into view.

We can never forget the impression made upon us by the sight. We speak of many things here below as awful, but that word has its full meaning when carried to the top of Pichincha. There you see a frightful opening in the earth's crust nearly a mile in width and half a mile deep, and from the dark abyss comes rolling up a cloud of sulphurous vapors. Monte Somma in the time of Strabo was a miniature; but this crater is on the top of a mountain four times the height of the Italian volcano. Imagination finds it difficult to conceive a spectacle of more fearful grandeur or such solemn magnificence. It well accords with Milton's picture of the bottomless pit. The united effect of the silence and solitude of the place, the great depth of the cavity, the dark precipitous sides, and the column of smoke standing over an unseen crevice, was to us more impressive than thundering Cotopaxi or fiery Vesuvius. Humboldt, after standing on this same brink, exclaimed, "I have never beheld a grander or more remarkable picture than that presented by this volcano;" and La Condamine compared to it "the Chaos of the poets."

Below us are the smouldering fires which may any moment spring forth into a conflagration; around us are black, ragged cliffs,—fit boundary for this gate-way to the internal regions. They look as if they had just been dragged up from the central furnace of the earth. Life seems to have fled in terror from the vicinity; even lichens, the children of the bare rocks, refuse to clothe the scathed and beetling crags. For some moments made mute by the

dreadful sight, we stood like statues on the rim of the mighty caldron, with our eyes riveted on the abyss below, lost in contemplating that which cannot be described. The panorama from this lofty summit is more pleasing, but equally sublime. Towards the rising sun is the long range of the Eastern Cordillera, hiding from our view the great valley of the Amazon. To right and left are the peaks of another procession of august mountains from Cotacachi to Chimborazo. We are surrounded by the great patriarchs of the Andes, and their speaker, Cotopaxi, ever and anon sends his muttering voice over the land.

The view westward is like looking down from a balloon. Those parallel ridges of the mountain chain, dropping one behind the other, are the gigantic staircase by which the ice-crowned Chimborazo steps down to the sea. A white sea of clouds covers the peaceful Pacific and the lower parts of the coast. But the vapory ocean, curling into the ravines, beautifully represents little coves and bays, leaving islands and promontories like a true ocean on a broken shore. We seem raised above the earth, which lies like an opened map below us; we can look down on the upper surface of the clouds, and, were it night, down too upon the lightnings. . . .

The first to reach the brink of the crater were the French Academicians in 1742. Sixty years after Humboldt stood on the summit. But it was not until 1844 that any one dared to enter the crater. This was accomplished by Garcia Moreno, now President of Ecuador, and Sebastian Wisse, a French engineer. Humboldt pronounced the bottom of the crater "inaccessible from its great depth and precipitous descent." We found it accessible, but exceedingly perilous. The moment we prepared to descend our guide ran away. We went on without him, but when half-way down were stopped by a precipice.

On the 22d of October, 1867, we returned to Pichincha with another guide and entered the crater by a different route. Manuel, our Indian, led us to the south side, and over the brink we went. We were not long in realizing the danger of the undertaking. Here the snow concealed an ugly fissure or covered a treacherous rock (for nearly all the rocks are crumbling), there we must cross a mass of loose sand moving like a glacier down the almost vertical side of the crater; and on every hand rocks were giving way, and, gathering momentum at each revolution, went thundering down, leaping over precipices and jostling other rocks, which joined in the race, till they all struck the bottom with a deep rumbling sound, shivered like so many bomb-shells into a thousand pieces, and telling us what would be our fate if we made a single misstep. We followed our Indian in single file, keeping close together, that the stones set free by those in the rear might not dash those below from their feet; feeling our way with the greatest caution, clinging with our hands to the snow, sand, rocks, tufts of grass, or anything that would hold for a moment; now leaping over a chasm, now letting ourselves down from rock to rock; at times paralyzed with fear, and always with death staring us in the face; thus we scrambled for two hours and a half till we reached the bottom of the crater.

Here we found a deeply furrowed plain strewn with ragged rocks, and containing a few patches of vegetation, with half a dozen species of flowers. In the centre is an irregular heap of stones, two hundred and sixty feet high by eight hundred in diameter. This is the cone of eruption,—its sides and summit covered with an imposing group of vents, seventy in number, all lined with sulphur and exhaling steam, black smoke, and sulphurous gas. The temperature of the vapor just within the fumarole is 184° , water boiling beside it at 189° .

The central vent or chimney gives forth a sound like the violent bubbling of boiling water. As we sat on this fiery mount surrounded by a circular rampart of rocks, and looked up at the immense towers of dark dolerite which ran up almost vertically to the height of twenty-five hundred feet above us, musing over the tremendous force which fashioned this awful amphitheatre,—spacious enough for all the gods of Tartarus to hold high carnival,—the clouds which hung in the thin air around the crest of the crater pealed forth thunder after thunder, which, reverberating from precipice to precipice, were answered by the crash of rocks let loose by the storm, till the whole mountain seemed to tremble like a leaf. Such acoustics, mingled with the flash of lightning and the smell of brimstone, made us believe that we had fairly got into the realm of Pluto. It is the spot where Dante's "Inferno" ought to be read.

INCA HIGH-ROADS AND BRIDGES.

E. GEORGE SQUIER.

[Squier's "Peru: Incidents of Travel and Exploration in the Land of the Incas" is the source of our present selection. The author, Ephraim George Squier, was born in Albany County, New York, in 1821. He studied the aboriginal monuments of New York, and afterwards travelled and made extensive archæological researches in Central America. He was appointed United States Commissioner to Peru in 1863, and made important studies of the ancient ruins of that country. We give his interesting account of the perilous crossing of the Apurimac.]

THE great and elaborate highways, or public roads, which the chroniclers and the historians, following their

authority, tell us were constructed by the Incas throughout their vast empire, all radiating north, east, south, and west from the imperial city of Cuzco, if they existed at all in Central and Southern Peru, have disappeared, leaving here and there only short sections or fragments, hardly justifying the extravagant praise that has been bestowed on them. The modern mule-paths, miscalled roads, must necessarily follow nearly, if not exactly, the routes of the Indians under the Empire. The physical conformation of the country is such that communication between *puna* and *puna*, and from valley to valley, must always be made by the same passes. All these passes over the mountains are marked by huge piles of stone raised, like the cairns of Scotland and Wales, by the contribution of a single stone from each traveller as an offering to the spirits of the mountains, and as an invocation for their aid in sustaining the fatigues of travel. These great stone-heaps still exist, and will remain to the end of time, monuments marking forever the routes of travel in the days of the Incas.

We know, therefore, from these rude monuments very nearly what were the ancient lines of communication. These are also further indicated by remains of the *tambos*, which occur at intervals all through the country, and oftenest in places remote from supplies, in cold and desert districts, where the traveller stands most in need of food and shelter.

The modern voyager would consider himself supremely fortunate were he to find one in a hundred of these *tambos*, now in existence; for travelling in Peru is infinitely more difficult and dangerous than it was in the days of the Incas: more difficult, because the facilities are less; more dangerous, because the laws are more lax, and the moral standard of the people lower. The influence of Spain in Peru has

been every way deleterious; the civilization of the country was far higher before the Conquest than now.

As I have said, few traces of the Inca roads, such as are described by the early writers, and such as Humboldt saw in Northern Peru, are now to be found in the southern part of that country; and as the modern pathways must follow the ancient lines, I infer that they never existed here, for there is no reason why they should have suffered more from time and the elements in one part of the country than in another.

Between Cuzco and the sweet valley of Yucay there are numerous traces of an ancient road, some sections of which are perfect. These sections coincide in character with the long reaches in the direction of Quito. They consist of a pathway from ten to twelve feet wide, raised slightly in the centre, paved with stones, and the edges defined by larger stones sunk firmly in the ground. Where this road descends from the elevated *puna*—a sheer descent of almost four thousand feet into the valley of Yucay—it zig-zags on a narrow shelf cut in the face of the declivity, and supported here and there, where foothold could not otherwise be obtained, by high retaining-walls of cut stone, looking as perfect and firm as when first built centuries ago.

High mountain-ranges and broad and frigid deserts, swept by fierce, cold winds, are not the sole obstacles to intercommunication in the Altos of Peru, and among those snow-crowned monarchs of the Andes and Cordilleras. There are deep valleys, gorges, and ravines among the mountains, or cut deep in the plains that alternate with them, in which flow swelling rivers or rapid torrents, fed by the melting snows in the dry season, and swollen by the rains in the wet season. They are often unfordable, but still they must somehow be passed by the traveller. A

few bridges of stone were constructed by the Spaniards, some after the Conquest, and a few others have been erected by their descendants; but, as a rule, the rivers and mountain-torrents are passed to-day by the aid of devices the same as were resorted to by the Incas, and at points which they selected.

Had the principle of the arch been well understood by the ancient inhabitants, who have left some of the finest stone-cutting and masonry to be found in the world, there is no doubt the interior of Peru would have abounded in bridges rivalling those of Rome in extent and beauty. As it was, occupying a country destitute of timber, they resorted to suspension-bridges, no doubt precisely like those now constructed by their descendants and successors,—bridges formed of cables of braided withes, stretched from bank to bank, and called *puentes de mimbres* (bridges of withes). Where the banks are high, or where the streams are compressed between steep or precipitous rocks, these cables are anchored to piers of stone. In other places they are approached by inclined causeways, raised to give them the necessary elevation above the water. Three or four cables form the floor and the principal support of the bridge, over which small sticks, sometimes only sections of cane or bamboo, are laid transversely, and fastened to the cables by vines, cords, or thongs of raw hide. Two smaller cables are sometimes stretched on each side as a guard or hand-rail. Over these frail and swaying structures pass men and animals, the latter frequently with their load on their backs.

Each bridge is usually kept up by the municipality of the nearest village; and as it requires renewal every two or three years, the Indians are obliged at stated periods to bring to the spot a certain number of withes of peculiar kinds of tough wood, generally of that variety called ioke,

which are braided by experts, and then stretched across the stream or river by the united exertions of the inhabitants. Some of the larger and most important structures of this kind are kept up by the government, and all passengers and merchandise pay a fixed toll. Such is the case with the great bridge over the Apurimac, on the main road from the ancient Guamanga (now Ayacucho) to Cuzco.

The Apurimac is one of the head-waters of the Amazon, a large and rapid stream, flowing in a deep valley, or rather gigantic ravine, shut in by high and precipitous mountains. Throughout its length it is crossed at only a single point, between two enormous cliffs, which rise dizzily on both sides, and from the summits of which the traveller looks down into a dark gulf. At the bottom gleams a white line of water, whence struggles up a dull but heavy roar, giving to the river its name, *Apu-rimac* signifying, in the Quichua tongue, "the great speaker." From above, the bridge, looking like a mere thread, is reached by a path which on one side traces a thin, white line on the face of the mountain, and down which the boldest traveller may hesitate to venture. This path, on the other side, at once disappears from a rocky shelf, where there is just room enough to hold the hut of the bridge-keeper, and then runs through a dark tunnel cut in the rock, from which it emerges to trace its line of many a steep and weary zigzag of the face of the mountain. It is usual for the traveller to time his day's journey so as to reach this bridge in the morning, before the strong wind sets in; for during the greater part of the day it sweeps up the cañon of the Apurimac with great force, and then the bridge sways like a gigantic hammock, and crossing is next to impossible.

It was a memorable incident in my travelling experi-

ences, the crossing of this great swinging bridge of the Apurimac. I shall never forget it, even if it were not associated with a circumstance which, for the time, gave me much uneasiness and pain. The fame of the bridge over the Apurimac is coextensive with Peru, and every one we met who had crossed it was full of frightful reminiscences of his passage: how the frail structure swayed at a dizzy height between gigantic cliffs over a dark abyss, filled with the deep, hoarse roar of the river, and how his eyes grew dim, his heart grew faint, and his feet unsteady as he struggled across it, not daring to cast a look on either hand.

Our road to the bridge was circuitous and precipitous, leading down the steeper side of the ridge of La Banca, where it seemed hardly possible for a goat to find foothold. It was a succession of abrupt zigzags, here and there interrupted by a stretch of horizontal pathway. To see our cavalcade it was necessary to look up or down, not before or behind. It was like descending the coils of a flattened corkscrew. In places the rocks encroached on the trail so that it was necessary to crouch low on the saddle-bow to pass beneath them, or else throw the weight of the body on the stirrup overhanging the declivity of the mountain, to avoid a collision. The most dangerous parts, however, were where land-slips had occurred, and where it was impossible to construct a pathway not liable at any moment to glide away beneath the feet of our animals. The gorge narrowed as we descended, until it was literally shut in by precipices of stratified rock strangely contorted; while huge masses of stone, rent and splintered as from some terrible convulsion of nature, rose sheer before us, apparently preventing all exit from the sunless and threatening ravine, at the bottom of which a considerable stream struggled, with a hoarse roar, among the black boulders.

There was foothold for neither tree nor shrub, and our mules picked their way warily, with head and ears pointed downward, among the broken and angular masses. The occasional shouts of the arrieros sounded here sharp and percussive, and seemed to smite themselves to death against the adamantine walls. There was no room for echo. Finally the ravine became so narrowed between the precipitous mountain-sides as barely to afford room for the stream and our scant party. Here a roar, deeper, stronger, and sterner than that of the stream which we had followed, reached our ears, and we knew it was the voice of the "Great Speaker." A little farther on we came in view of the river and two or three low huts built on the circumscribed space where the two streams came close together. Our muleteers were already busy in unloading the baggage, preparatory to its being carried across the bridge on the cicatrized backs of the occupants of the huts.

To the left of the huts, swinging high in a graceful curve, between the precipices on either side, looking wonderfully frail and gossamer-like, was the famed bridge of the Apurimac. A steep, narrow path, following for some distance a natural shelf, formed by the stratification of the rock, and for the rest of the way hewn in its face, led up, for a hundred feet, to a little platform, also cut in the rock, where were fastened the cables supporting the bridge. On the opposite bank was another and rather larger platform, partly roofed by the rock, where was the windlass for making the cables taut, and where, perched like goats on some mountain-shelf, lived the custodians of the bridge. The path could barely be discovered turning sharp around a rocky projection to the left of this perch, then reappearing high above it, and then, after many a zigzag, losing itself in the dark mouth of a tunnel.

My companions and myself lost no time in extracting

the measuring tapes and sounding lines from our *alforjas*, and hurriedly scrambled up the rocky pathway to the bridge. It was in bad condition. The cables had slacked so that the centre of the bridge hung from twelve to fifteen feet lower than its ends, and, then, the cables had not stretched evenly, so that one side was considerably lower than the other. The cables on either hand, intended to answer the double purpose of stays and parapets, had not sunk with the bridge, and were so high up that they could not be reached without difficulty; and many of the lines dropping from them to the floor, originally placed widely apart, had been broken, so that practically they were useful neither for security nor for inspiring confidence.

Travelling in the Andes soon cures one of any nervousness about heights and depths, and is a specific against dizziness. Nevertheless, we all gave a rather apprehensive glance at the frail structure before us, but we had no difficulty in crossing and recrossing—as we did several times—except on approaching the ends, to which our weight transferred the sag of the cables and made the last few yards rather steep. A stiff breeze swept up the cañon of the river, and caused a vibration of the bridge from side to side of at least six feet. The motion, however, inspired no sense of danger.

We carefully measured the length and altitude of the bridge, and found it to be from fastening to fastening one hundred and forty-eight feet long, and at its lowest part one hundred and eighteen feet above the river. Mr. Markham, who crossed it in 1855, estimated the length at ninety feet and the height at three hundred feet. Lieutenant Gibbon, who crossed it in 1857, estimated the length at three hundred and twenty-four feet and the height one hundred and fifty feet. Our measurements, however, are

exact. The height may be increased perhaps ten feet when the cables are made taut. They are five in number, twisted from the fibres of the *cabuya*, or maguey plant, and are about four inches thick. The floor is of small sticks and canes, fastened transversely with raw-hide strings. The Indians coming from Andahuaylas and other districts where the *cabuya* grows, generally bring a quantity of leaves with them wherewith to pay their toll. These are prepared and made into rope by the custodians of the bridge, who must be glad of some occupation in their lone and lofty eyrie.

Our baggage was carried over the bridge, and the animals were then led across one by one, loaded and started up the mountain. The space is too limited to receive more than two loaded mules at a time, and instances are known of their having been toppled over the precipice from overcrowding. We led our horses over without difficulty except in getting them on the bridge. But once fairly on the swaying structure they were as composed as if moving on the solid ground. Perhaps even to the lowest animal intelligence it must be apparent that the centre of the bridge of the Apurimac is not the place for antics, equine or asinine.

Mounted once more, we commenced our steep and difficult ascent. At one place the sheer precipice presented itself on one side, and a vertical wall on the other; next it was a scramble up a ladder of stairs, partly cut in the rock and partly built up with stones against it; then a sudden turn, with a parapet built around it in a semicircle, to prevent descending animals from being carried into the abyss below by their own momentum. Our cargo-mules toiled up painfully above us, stopping every few steps to breathe, while the muleteers braced themselves against their haunches to afford them some support and rest.

We had scarcely reached half-way to the mouth of the tunnel, which enters the mountain at the base of a vast vertical mass of rock, when our attention was arrested by the shouts of our men and a commotion among the animals above us. It was occasioned by a descending train of loaded mules, just plunging out of the black throat of the tunnel. The mountain mule always seeks to take the wall of the animal it meets, being perfectly aware of the danger of trying to pass on the outer side of the pathway; and it sometimes happens that neither will give way under any amount of persuasion or blows. The muleteers have to unload the animals, which may then be got past each other. A similar difficulty occurred now, and the conductor of the advancing train hurried down to warn us to dismount and seek the widest part of the path, or some nook by its side, and there await the passage of his mules. He had hardly done speaking when we saw one of our own mules, loaded with our trunks, come plunging down the narrow zigzagging way, evidently in fright, followed wildly by its driver. Just before reaching the place where we stood the animal fell, going literally heels over head, and would have been carried over the little platform of rock into the river had not the master of the descending train caught the falling mule by its foreleg, and in this way saved it from tumbling over. He at once placed his whole weight on its ears, thus prevented it from struggling, and thus obviating its destruction, while we detached its cargo. A foot farther, and the mule would inevitably have been lost.

It was with no little satisfaction that we saw the last mule of the train pass us, and resumed our ascent. We found the tunnel a roomy one, two or three hundred yards in length, with openings from the face of the precipice for the admission of light and air. Through these we caught brief

glimpses of the grand and solemn mountains on the opposite side of the cañon, and through them came in also, hoarse and sullen, the deep voice of the river. I am uncertain as to how far this tunnel may be ascribed to the Incas, but feel sure that their bridge across the Apurimac was at precisely the same point with the present one. We were fully two hours in ascending the steeps, and reached the high mountain-circled plain in which stands the straggling town of Curahuasi, a well-watered village buried among the trees and shrubbery.

THE GAUCHO AND HIS HORSE.

THOMAS J. HUTCHINSON.

[Among the skilled horsemen of the earth the gaucho of the plains of Argentina bears pre-eminence. The cow-boy of our Western plains somewhat nearly approaches him, but the cow-boy is only a passing accident, not an institution, like the gaucho, who will still flourish on his native soil when the cow-boy has ceased to be. Hutchinson's "Buenos Ayres and Argentine Gleanings" gives us a well-limned picture of this interesting individual, to which we owe the following selection.]

I CAN hardly consider myself presumptuous in believing that few travellers who have made an ascent of the Paraná for the first time have done so with a more agreeable impression of its beauty than I experienced. The only drawback connected with this pleasure is the consciousness of being unable fully to describe it. My readers will, however, be indulgent enough to give me credit for an effort to do my best.

Our water-way in the little steamer "Dolircitas," after leaving Buenos Ayres, was through one of the narrow

passages that are the boundaries of islets, higher up than, as well as parallel with, the island of Martin Garcia. As we steam along and pass the estancias of wealthy farmers, I observe on the banks hundreds of cows, large troops of horses, and flocks of sheep, in numbers sufficient to puzzle even the calculating Pedder. There are very few wild trees to be seen, except on the highlands an occasional specimen of the Ombu or Algaroba species. The residences are invariably surrounded by groves or shrubberies of peach-trees. The physical aspect of the islands is quite flat, and until we advance a few hundred miles there is no elevation above a few feet close to the river's side. Now and then—as, for example, when passing through the creek called the “Baradero”—I catch a glimpse of high land, on part of which there is a convent or chapel; but the whole country is uncultivated, except in isolated patches near the compounds of the tillers.

Flocks of wild duck and snipe are seen in abundance; wild turkeys likewise, with occasionally a group of flamingoes, whose scarlet plumage forms a strikingly dazzling object in the bright sunshine. Indeed, birds of various kinds are about us everywhere. Passing through one of these island passages, you see strewn the banks on the mainland side the skeletons of cows and horses, while other poor brutes are lying in the agonies of death; for the mud at the extreme edge of the water is too soft to support them; hence, when they go down to drink, they are swamped in its sponginess, and must therefore remain to die.

Steaming on, we pass or meet several small river-craft engaged in the coasting-trade between Montevideo, Buenos Ayres, and the towns up the river, until we land at an estancia, where cows, horses, and sheep are bred and nurtured: the cows and bullocks chiefly for the hides and meat, disposed of as already described at a *saladero*; sheep

for their wool; while horses are reared for every possible purpose, and are turned to use whether alive or dead.

Horses dead! Their skins are tanned; the grease of the mare's body is used for light, and for many oleaginous purposes. Close to one of our towns is a rancho or hut belonging to a brick-maker, and there, between his door and the kiln, is an immense pile—as high as an ordinary house—of dead horses, whose bodies are to be used for burning the bricks. Mares' tongues, preserved, are sold in the market as luxuries; hoofs, skulls, shank, thigh, and other bones of the animal, as well as the hair of the mane and tail, are exported hence to England, America, and other places across the sea in large quantities. At the *saladeros*, too, they slaughter mares in hundreds for their hides and grease, the operation being conducted by crunching the animal's skull with a mallet, after it has been brought to the ground by means of a lasso thrown round the feet. One can scarcely travel a mile through the camp without seeing a dead horse somewhere.

Horses alive! At many stations on the river they fish on horseback, by riding into a considerable depth of water and throwing a peculiar kind of net, which is drawn back to the shore by the horse. Our letters are delivered at the door by a rat-tat in regular English style from the postman, who is on horseback. The daily journal is brought to us by a cavalier, who hands it in without dismounting; even a beggar-man rides up every Saturday to solicit *Una limosna por el amor de Dios*, and he has a license from the police in the shape of a piece of branded wood suspended round his neck. The aristocracy of beggary is evident in this fellow, too; for on one occasion, being offered cold meat and bread by my servant, he rode off, indignantly saying he wanted money to buy *cigarritos*.

Horses making bricks! Ay, incredible as it may appear,

there are the very animals which dragged the dead bodies of their brethren to be made fuel of at the brick-kilns before mentioned, now driven round and round in a circus, tramping into malleable mud clay and water mixed together, and doing everything in the brick-making except the moulding.

Horses threshing corn! Here at our friend's estancia I see another large circus, styled a *hera*, in which are placed several sheaves of wheat, and into this are turned fifteen to twenty horses; a mounted man goes in also, and drives these animals with whip and yell round the circus until all the corn is threshed by their tramping.

Horses churning butter! A novel sort of thing it is to see a bag made of hides, into which the milk is put when it is turned sufficiently sour; this bag, fastened to a long strip of rope-hide, is attached at the other end to the leather girth which is round the horse's body; the latter is then mounted by a gaucho, and ridden at a hard pace over the camp for a sufficient length of time to secure the making of the butter, by bumping the milk-bag against the ground.

A gaucho without his steed is an impracticability. To move his furniture, consisting of beds, chairs, tables, crockery, or hardware, the horse's back is fitted to the burden. Coffins are conveyed to the burying-ground by being strapped transversely on a horse's loins; and one would scarcely be surprised to hear of a specimen of the semi-centaur under consideration going or cooking his dinner on horseback, more especially with the picture before us of a dentist operating on a poor fellow's grinders, the patient and his physician being both mounted.

No crusader of olden time could have borne himself more proudly at the head of a gallant regiment bound to the Holy Land than does the gaucho, who guides a troop of twenty to thirty carretas, each drawn by six bullocks,

across the Pampas to Cordova or Mendoza. On his saddle, chiefly made of untanned horse-hide and sheep-skin, he sits with the consciousness that he is the horse's master. Indeed, it is rarely that the real gaucho puts his foot in a stirrup,—for practical purposes of riding never,—as it is only on state occasions that he uses them. Stirrups made in this country are of a triangular form, of iron or silver, with the base fabricated after the fashion of a filigree cruet-stand, though on a diminutive scale. At the museum in Buenos Ayres I saw some of these triangular stirrups that were described as having been brought from Paraguay, made from hard wood, so large, clumsy, and heavy as to constitute in themselves a load for a horse. With such heavy stirrups it may be imagined what a weight the gaucho's horse has to bear, when we consider the component parts of the saddle or recado.

[This saddle is a very complex affair, made up of layers of sheep-skin, carpet, cow-hide, woollen cloth, etc., too intricate to be here described. It consists in all of twelve separate parts.]

The skill and endurance of the gaucho in the management of horses is very remarkable. One of these men is reported to have stood on the transverse bar, which crosses over the gate of the corral, and dropped down upon the back of a horse, while the animal, in company with several others, without bridle or saddle, was at full gallop out of the enclosure. What made the feat more adroit was the fact of his having permitted a looker-on to select the horse for him to bestride before the whole lot were driven out. The endurance of the gaucho is also striking; and I have been told of a man, well known at Buenos Ayres, having ridden a distance of seventy leagues—that is to say, two hundred and ten miles—in one day to that city.

Señor Don Carlos Hurtado, of Buenos Ayres, informs me

that the great gaucho game, in which the famous Rosas was most proficient, was what is called *el pialar*,—that is, catching horses by lassoing their feet (the ordinary mode of doing this round the neck is called *enlaser*). Two lines of horsemen, each from ten to twenty in number, are placed at distances so far apart as to allow a mounted gaucho to pass between them. This man is to gallop as fast as he can from one end to the other,—in fact, to run the gauntlet. Every horseman in the lines between which he passes is furnished with a lasso. As he gallops up to the end of the line the first lasso is thrown; should it miss him, the second is cast, and so on. The dexterity evidenced by the watchfulness of men able to throw in such rapid succession after a horse which is galloping, whilst they are standing, is truly expert. At length the horse is pinned, and down he falls as if he were shot. And now the activity of the gaucho is displayed, for he comes on his feet without any injury, smoking his cigarette as coolly as when he lighted it at the starting-post.

The original popularity of Rosas was founded on his gaucho dexterity.

The game of *el pato* is performed by sewing a cooked duck into a piece of hide, leaving a leather point at each end for the hand to grasp. This play having been in former times limited in its carousal to the feast of St. John (or San Juan), a gaucho took it up. Whoever is the smartest secures the duck, and gallops away to any house where he knows a woman residing who bears the name of Juana,—Joan I suppose she would be called in English. It is an established rule that the lady of this name should give a four-real piece (*i.e.*, one shilling and sixpence), either with the original duck returned or another equally complete. Then away he gallops to another house where lives a maiden of the name of Leonora, followed by a troop of

his gaucho colleagues, trying to snap the duck-bag out of his hand. With it, of course, must be delivered up the four-real piece in the best of good humor. Falls and broken legs have often been the result of this game.

Juégó de la sortija is a class of sport played by having a small finger-ring fastened under a gibbet, beneath which a gaucho gallops, and tries to tilt off the ring with a skewer which he holds in his hand. This is done for a prize.

The salutation between two gauchos—even though they be the best of friends—who have not met for a long time is prefixed by a pass of arms with their knives. The conduct of these men is in general marked by sobriety, but when the “patron” pays them their wages they often buy a dozen of brandy or of gin, and this is all drunk, or spilled in drinking, by one man at a single sitting.

It often happens in the gaucho communities that some one gains a reputation for bravery. To prove his courage, this hero goes to a *pulperia*, with a bottle in one hand and a knife in the other, stands at the door, and turns out all the occupants. One gaucho in the north and another in the south hear of each other's bravery, obtain a meeting, and, after returning compliments, draw out their knives and fight to the death.

The gaucho dress is peculiar,—a poncho, which is placed over the head by a hole in the centre, and which falls over the body to the hips. This is often of a very gay pattern, especially on Sundays and holidays. The lower garment is a curious combination of bedgown and Turkish trousers, named *calzoncillos*; it is bordered by a fringe, sometimes of rich lace, from two to six inches in depth. Enormous spurs form part of the toilette. I saw a pair on a gaucho at the estancia of my friend Dr. Perez that measured seven inches in diameter. These were of a larger size than those mentioned by Mr. Darwin in his “Journal of

Researches," describing the "Beagle's" voyage round the world, and which he saw in Chile, measuring six inches in the same direction as aforesaid. The boots for working purposes are made of untanned hide, but those for holiday dress are often of patent leather with bright scarlet tops.

Many of the gauchos wear purple or yellow handkerchiefs over their heads, inside the sombrero, and others have wide belts around their bodies, that are glistening with silver dollars tacked on. The costume of a gaucho is, however, only complete when he is on horseback with the *bolas*, the *lasso*, and a knife at his girdle. The *bolas* consists of two balls, which are fastened at the end of two short leathern ropes, and thrown by means of another short thong,—all three being secured together,—when they are whirled round the head of the thrower before propulsion, which is so efficaciously managed as to bring down at once the horse or cow in whose legs they get entangled.

Mr. Prescott, in his admirable work on the "History and Conquest of Peru," when alluding to the attack made by the Peruvians on their ancient capital Cuzco, then (A.D. 1535) occupied by the Spanish invaders under Pizarro, writes thus of the lasso: "One weapon peculiar to South American warfare was used to some effect by the Peruvians. This was the lasso,—a long rope with a noose at the end, which they adroitly threw over the rider, or entangled with it the legs of his horse, so as to bring them both to the ground. More than one family fell into the hands of the enemy by this expedient." The knowledge of the weapon was therefore, in all probability, derived from this quarter.

The horse-riding of the Chaco Indians, even in our day, surpasses that of the gaucho. Fancy a troop of horses, apparently riderless, galloping at full speed, yet each of these animals is managed by a man who, with one arm

over the neck of his brute, and with his other hand guiding a bridle as well as grasping a lance, supports the whole weight of his body by the back of the feet near the toes, clinging on the horse's spine above his loins,—the rider's body being thus extended, under cover of the steed's side. As quick as thought he is up and standing on the horse's back with a war-cry of defiance,—although, according to Captain Page, U.S.N., never flinging away his javelin, for with him it must be a hand-to-hand fight,—whilst with equal rapidity he is down again, so as to be protected by the body of the horse, which is all the time in full gallop.

Mr. Coghlan, C.E., and now attached to the Buenos Ayres government, writes of those whom he saw when exploring the Salado del Norte: "The riding of the Indians is wonderful. The gauchos even give their horses some preliminary training; but the Indian catches him (of course with the lasso), throws him down, forces a wooden bit into his mouth, with a piece of hide binds it fast to the lower jaw, and rides him. I have seen a man at the full gallop of his horse put his hand on the mane and jump forward on his feet, letting the animal go on without a check, merely to put his hand to something."

VALPARAISO AND ITS VICINITY.

CHARLES DARWIN.

[It is doubtful if there exists a more interesting work of scientific travel than Darwin's "Journal of Researches into the Natural History and Geology of the Countries visited during the Voyage Round the World of H. M. S. Beagle." Nothing of scientific interest and value seems to have missed the eyes of the indefatigable explorer, and he has described what he saw in so lucid and agreeable a

style as to make his work a veritable classic of travel and research. We give here his description of Valparaiso and the adjoining country.]

July 23.—The “Beagle” anchored late at night in the bay of Valparaiso, the chief seaport of Chile. When morning came everything appeared delightful. After Tierra del Fuego the climate felt quite delicious,—the atmosphere so dry, and the heavens so clear and blue with the sun shining brightly, that all nature seemed sparkling with life. The view from the anchorage is very pretty. The town is built at the very foot of a range of hills, about sixteen hundred feet high and rather steep. From its position it consists of one long, straggling street, which runs parallel to the beach, and wherever a ravine comes down the houses are piled up on each side of it. The rounded hills, being only partially protected by a very scanty vegetation, are worn into numberless little gullies, which expose a singularly bright red soil. From this cause, and from the low whitewashed houses with tile roofs, the view reminded me of St. Cruz in Teneriffe.

In a northeasterly direction there are some fine glimpses of the Andes; but these mountains appear much grander when viewed from the neighboring hills; the great distance at which they are situated can then more readily be perceived. The volcano of Aconcagua is particularly magnificent. This huge and irregularly conical mass has an elevation greater than that of Chimborazo; for, from measurements made by officers of the “Beagle,” its height is no less than twenty-three thousand feet. The Cordillera, however, viewed from this point, owe the greater part of their beauty to the atmosphere through which they are seen. When the sun was setting in the Pacific, it was admirable to watch how clearly their rugged outlines could be distinguished, yet how varied and how delicate were the shades of their color.

The immediate neighborhood of Valparaiso is not very productive to the naturalist. During the long summer the wind blows steadily from the southward, and a little off shore, so that rain never falls; during the three winter months, however, it is sufficiently abundant. The vegetation in consequence is very scanty: except in some deep valleys there are no trees, and only a little grass and a few low bushes are scattered over the less steep parts of the hills. When we reflect that at the distance of three hundred and fifty miles to the south this side of the Andes is completely hidden by one impenetrable forest, the contrast is very remarkable.

I took several long walks while collecting objects of natural history. The country is pleasant for exercise. There are many very beautiful flowers; and, as in most other dry climates, the plants and shrubs possess strong and peculiar odors,—even one's clothes in brushing through them becomes scented. I did not cease from wonder at finding each succeeding day as fine as the foregoing. What a difference does climate make in the enjoyment of life! How opposite are the sensations when viewing black mountains half enveloped in clouds, and seeing another range through the light blue haze of a fine day! The one for a time may be very sublime; the other is all gayety and happy life.

August 14.—I set out on a riding excursion, for the purpose of geologizing the basal parts of the Andes, which alone at this time of the year are not shut up by the winter snow. Our first day's ride was northward along the sea-coast. After dark we reached the Hacienda de Quintero, the estate which formerly belonged to Lord Cochrane. My object in coming here was to see the great beds of shells which stand some yards above the level of the sea, and are burnt for lime. The proofs of the elevation of this

whole line of coast are unequivocal: at the height of a few hundred feet old-looking shells are numerous, and I found some at thirteen hundred feet. These shells either lie loose upon the surface or are embedded in a reddish-black vegetable mould. I was very much surprised to find under the microscope that this vegetable mould is really marine mud, full of minute particles of organic bodies.

15th.—We returned towards the valley of Quillota. The country was exceedingly pleasant, just such as poets would call pastoral; green open lawns, separated by small valleys with rivulets, and the cottages, we may suppose of the shepherds, scattered on the hill-sides. We were obliged to cross the ridge of the Chilicauquen. At its base there were many fine evergreen forest-trees, but these flourished only in the ravines, where there was running water. Any person who had seen only the country near Valparaiso would never have imagined that there had been such picturesque spots in Chile.

As soon as we reached the brow of the Sierra, the valley of Quillota was immediately under our feet. The prospect was one of remarkable artificial luxuriance. The valley is very broad and quite flat, and is thus easily irrigated in all parts. The little square gardens are crowded with orange and olive-trees and every sort of vegetable. On each side huge bare mountains rise, and this from the contrast renders the patchwork valley the more pleasing. Whoever called Valparaiso the "Valley of Paradise" must have been thinking of Quillota. We crossed over to the Hacienda de San Isidro, situated at the very foot of the Bell Mountain.

Chile, as may be seen in the maps, is a narrow strip of land between the Cordillera and the Pacific; and this strip is itself traversed by several mountain-lines, which in this part run parallel to the great range. Between these outer lines and the main Cordillera a succession of level basins,

generally opening into each other by narrow passages, extend far to the southward; in these the principal towns are situated, as San Felipe, Santiago, San Fernando. These basins or plains, together with the transverse flat valleys (like that of Quillota), which connect them with the coast, I have no doubt are the bottoms of ancient inlets and deep bays, such as at the present day intersect every part of Terra del Fuego and the western coast. Chile must formerly have resembled the latter country in the configuration of its land and water. The resemblance was occasionally shown strikingly when a level fog-bank covered, as with a mantle, all the lower parts of the country; the white vapor curling into the ravines beautifully represented little coves and bays, and here and there a solitary hillock, peeping up, showed that it had formerly stood there as an islet. The contrast of these flat valleys and basins with the irregular mountains gave the scenery a character which to me was new and very interesting.

From the natural slope to seaward of these plains they are very easily irrigated, and in consequence singularly fertile. Without this process the land would produce scarcely anything, for during the whole summer the sky is cloudless. The mountains and hills are dotted over with bushes and low trees, and excepting these the vegetation is very scanty. Each land-owner in the valley possesses a certain portion of hill-country, where his half-wild cattle, in considerable numbers, manage to find sufficient pasture.

Once every year there is a grand *rodeo*, when all the cattle are driven down, counted, and marked, and a certain number separated to be fattened in the irrigated fields. Wheat is extensively cultivated, and a good deal of Indian corn; a kind of bean is, however, the staple article of food for the common laborers. The orchards produce an overflowing abundance of peaches, figs, and grapes. With all

these advantages, the inhabitants of the country ought to be much more prosperous than they are.

16th.—The major-domo of the hacienda was good enough to give me a guide and fresh horses, and in the morning we set out to ascend the Campana, or Bell Mountain, which is six thousand four hundred feet high. The paths were very bad, but both the geology and scenery amply repaid the trouble. We reached, by the evening, a spring called the Agua del Guanaco, which is situated at a great height. This must be an old name, for it is very many years since a guanaco drank its waters. During the ascent I noticed that nothing but bushes grew on the northern slope, while on the southern slope there was a bamboo about fifteen feet high. In a few places there were palms, and I was surprised to see one at an elevation of at least four thousand five hundred feet. These palms are, for their family, ugly trees. Their stem is very large and of a curious form, being thicker in the middle than at the base or top. They are excessively numerous in some parts of Chile, and valuable on account of a sort of treacle made from the sap.

On one estate near Petorca they tried to count them, but failed, after having numbered several hundred thousand. Every year in the early spring, in August, very many are cut down, and when the trunk is lying on the ground the crown of leaves is lopped off. The sap then immediately begins to flow from the upper end, and continues so doing for some months; it is, however, necessary that a thin slice should be shaved off from that end every morning, so as to expose a fresh surface. A good tree will give ninety gallons, and all this must have been contained in the vessels of the apparently dry trunk. It is said that the sap flows much more quickly on those days when the sun is powerful, and likewise that it is absolutely necessary to take

care, in cutting down the tree, that it should fall with its head upward on the slope of the hill; for if it falls down the slope scarcely any sap will flow, although in that case one would have thought that the action would have been aided, instead of checked, by the force of gravity. The sap is concentrated by boiling, and is then called treacle, which it very much resembles in taste.

We unsaddled our horses near the spring, and prepared to pass the night. The evening was fine, and the atmosphere so clear that the masts of vessels at anchor in the bay of Valparaiso, although no less than twenty-six geographical miles distant, could be distinguished clearly as little black streaks. A ship doubling the point under sail appeared as a bright white speck. Anson expresses much surprise, in his voyage, at the distance at which his vessels were detected from the coast; but he did not sufficiently allow for the height of the land and the great transparency of the air.

The setting of the sun was glorious, the valleys being black, whilst the snowy peaks of the Andes yet retained a ruby tint. When it was dark we made a fire beneath a little arbor of bamboos, fried our *charqui* (or dried slips of beef), took our maté, and were quite comfortable. There is an inexpressible charm in this living in the open air. The evening was calm and still; the shrill noise of the mountain biceacha and the faint cry of a goatsucker were occasionally to be heard. Besides these, few birds, or even insects, frequent these dry, parched mountains.

17th.—In the morning we climbed up the rough mass of greenstone which crowns the summit. This rock, as frequently happens, was much shattered and broken into huge angular fragments. I observed, however, one remarkable circumstance,—namely, that many of the surfaces presented every degree of freshness, some appearing

as if broken the day before, while on others lichens had either just become, or had long grown, attached. I so fully believed that this was owing to the frequent earthquakes, that I felt inclined to hurry from below each loose pile. As one might very easily be deceived in a fact of this kind, I doubted its accuracy, until ascending Mount Wellington, in Van Diemen's Land, where earthquakes do not occur, and there I saw the summit of the mountain similarly composed and similarly shattered, but all the blocks appeared as if they had been hurled into their present position thousands of years ago.

We spent the day on the summit, and I never enjoyed one more thoroughly. Chile, bounded by the Andes and the Pacific, was seen as in a map. The pleasure from the scenery, in itself beautiful, was heightened by the many reflections which arose from the mere view of the Campana range, with its lesser parallel ones, and of the broad valley of Quillota directly intersecting them. Who can avoid wondering at the force which has upheaved these mountains, and even more so at the countless ages which it must have required to have broken through, removed, and levelled whole masses of them? It is well in this case to call to mind the vast shingle and sedimentary beds of Patagonia, which, if heaped on the Cordillera, would increase its height by so many thousand feet. When in that country I wondered how any mountain-chain could supply such masses and not have been utterly obliterated. We must not now reverse the wonder, and doubt whether all-powerful time can grind down mountains—even the gigantic Cordillera—into gravel and mud.

The appearance of the Andes was different from that which I had expected. The lower line of the snow was of course horizontal, and to this line the even summits of the range seemed quite parallel. Only at long intervals a

group of points or a single cone showed where a volcano had existed, or does now exist. Hence the range resembled a great solid wall, surmounted here and there by a tower, and making a most perfect barrier to the country.

Almost every part of the hill had been drilled by attempts to open gold-mines; the rage for mining has left scarcely a spot in Chile unexamined. I spent the evening as before, talking round the fire with my two companions. The *guasos* of Chile, who correspond to the *gauchos* of the Pampas, are, however, a very different set of beings. Chile is the more civilized of the two countries, and the inhabitants, in consequence, have lost much individual character. Gradations in rank are much more strongly marked. The *guaso* does not by any means consider every man his equal, and I was quite surprised to find that my companions did not like to eat at the same time with myself.

This feeling of inequality is a necessary consequence of the existence of an aristocracy of wealth. It is said that some few of the greater land-owners possess from five to ten thousand pounds sterling per annum, an inequality of riches which I believe is not met with in any of the cattle-breeding countries eastward of the Andes. A traveller does not here meet that unbounded hospitality which refuses all payment, but yet is so kindly offered that no scruples can be raised in accepting it. Almost every house in Chile will receive you for the night, but a trifle is expected to be given in the morning; even a rich man will accept two or three shillings.

The *gaucho*, though he may be a cut-throat, is a gentleman; the *guaso* is in few respects better, but at the same time a vulgar, ordinary fellow. The two men, although employed much in the same manner, are different in their habits and attire, and the peculiarities of each are universal in their respective countries. The *gaucho* seems

part of his horse, and scorns to exert himself excepting when on its back; the guaso may be hired to work as a laborer in the fields. The former lives entirely on animal food, the latter almost wholly on vegetable. We do not here see the white boots, the broad drawers, and scarlet chilipa, the picturesque costume of the Pampas. Here common trousers are protected by black and green worsted leggings. The poncho, however, is common to both. The chief pride of the guaso lies in his spurs, which are absurdly large. I measured one which was six inches in the *diameter* of the rowel, and the rowel itself contained upward of thirty points. The stirrups are on the same scale, each consisting of a square carved block of wood, hollowed out, yet weighing three or four pounds. The guaso is perhaps more expert with the lazo than the gaucho, but, from the nature of the country, he does not know the use of the bolas.

AN ESCAPE FROM CAPTIVITY.

BENJAMIN F. BOURNE.

[Benjamin Franklin Bourne, mate of a vessel that sailed, *via* the Straits of Magellan, for California in 1849, during the intensity of the gold fever, was taken prisoner by the Patagonians, having landed to bring off some of the sailors. He remained in their hands for more than three months, and in his "The Captive in Patagonia" gives a detailed description of the character and customs of the natives of that country. We extract from his work a good brief description of the country and its people.]

PATAGONIA as it offered itself to my observation more than answered the descriptions of geographers,—bleak, barren, desolate, beyond description or conception,—only

to be appreciated by being seen. Viewed from the Straits of Magellan, it rises in gentle undulations or terraces. Far as the eye can reach, in a westerly direction, it assumes a more broken and hilly appearance, and long ranges of mountains extending from north to south divide the eastern from the western shore. The soil is of a light, sandy character, and bears nothing worthy the name of a tree. Low bushes, or underwood, are tolerably abundant, and in the valleys a coarse wiry grass grows luxuriantly. Streams of water are rare. The natives draw their supplies principally from springs or pools in the valleys, the water of which is generally brackish and disagreeable.

The variety of animal is nearly as limited as that of vegetable productions. The guanaco, a quadruped allied to the lama and with some resemblance to the camelopard, is found in considerable numbers. It is larger than the red deer, fleet on the foot, usually found in large herds, frequenting not only the plains, but found along the course of the Andes. Its flesh is a principal article of food; its skin is dried with the hair on, in such a manner that, when wet, it retains its pliability and softness. This process of preserving skins seems to be peculiar to the Indian tribes, and is not unlike that by which buffalo-ropes, bear-skins, buckskins, and other articles of luxury, and even necessity, among us, are prepared by the North American Indians. Guanaco-skins are cut into pieces of all sizes, and sewed into a thousand fanciful patterns, every workman originating a style to suit himself. The hoofs are sometimes turned to account by the natives as soles for shoes, when they indulge in such a luxury, which is not often.

The enemy of the guanaco is the cougar, or "American lion," smaller than its African namesake, and more resembling the tiger in his character and habits, having a smooth, sleek coat, of a brownish-yellow color,—altogether a very

beautiful but ferocious creature. His chase is a favorite, though rare and dangerous, sport of the natives. Patagonia likewise boasts of the skunk, whose flesh is used for food. There are also foxes, and innumerable mice. Of birds, the only noticeable varieties are the condor, in the Andes, and the cassowary, a species of ostrich, smaller than that of Africa, on the plains; its plumage is not abundant, generally of a gray or dun color. Its flesh is tender and sweet, and with the fat much prized by the Indians. Like the African ostrich, it is exceedingly swift, only to be captured on horseback, and often fleet enough to outrun the fastest racer.

The climate is severe; the Rio Negro forms the northern boundary, and nearly the whole country is south of the parallel of 40° south latitude. At the time of my capture, which was in the month of May, the weather corresponded to that of November in the New England States. Its chilliness, however, was greatly increased by the bleak winds of that exposed locality. Along the Straits of Magellan the weather is often exceedingly changeable. Sudden and severe squalls, often amounting almost to a hurricane, vex the navigation of the straits, and sweep over the coast with fearful fury.

The habits of the Patagonians, or at least of the tribe among whom I was cast, are migratory, wandering over the country in quest of game, or as their caprice may prompt them. They subsist altogether on the flesh of animals and birds. The guanaco furnishes most of their food, and all their clothing. A mantle of skins, sewed with the sinews of the ostrich, fitted closely about the neck and extending below the knee, is their only article of dress, except in the coldest weather, when a kind of shoe, made of the hind hoof and a portion of the skin above it, serves to protect their inferior extremities.

In person they are large; on first sight, they appear absolutely gigantic. They are taller than any other race I have seen, although it is impossible to give any accurate description. The only standard of measurement I had was my own height, which is about five feet ten inches. I could stand very easily under the arms of many of them, and all the men were at least a head taller than myself. Their average height, I should think, is nearly six and a half feet, and there were specimens that could have been little less than seven feet high. They have broad shoulders, full and well-developed chests, frames muscular and finely proportioned, the whole figure and air making an impression like that which the first view of the sons of Anak is recorded to have made on the children of Israel. They exhibit enormous strength, whenever they are sufficiently aroused to shake off their constitutional laziness and exert it.

They have large heads, high cheek-bones, like the North American Indians, whom they also resemble in their complexion, though it is a shade or two darker. Their foreheads are broad, but low, the hair covering them nearly to the eyes; eyes full, generally black, or of a dark brown, and brilliant, though expressive of but little intelligence. Thick, coarse, and stiff hair protects the head, its abundance making any artificial covering superfluous. It is worn long, generally divided at the neck, so as to hang in two folds over the shoulders and back, but is sometimes bound above the temples by a fillet, over which it flows in ample luxuriance. Like more civilized people, the Patagonians take great pride in the proper disposition and effective display of their hair. Their teeth are really beautiful, sound and white,—about the only enviable feature of their persons. Feet and hands are large, but not disproportionate to their total bulk. They have deep, heavy voices and

speak in guttural tones,—the worst guttural I ever heard,—with a muttering, indistinct articulation, much as if their mouths were filled with hot pudding.

Their countenances are generally stupid, but, on closer inspection, there is a gleam of low cunning that flashes through this dull mask, and is increasingly discernible on acquaintance with them; when excited, or engaged in any earnest business that calls their faculties into full exercise, their features light up with unexpected intelligence and animation. In fact, as one becomes familiar with them, he will not fail to detect an habitual expression of “secretiveness” and duplicity, which he will wonder he did not observe sooner. They are almost as imitative as monkeys, and are all great liars; falsehood is universal and inveterate with men, women, and children. The youngest seem to inherit the taint, and vie with the oldest in displaying it. The detection of a falsehood gives them no shame or uneasiness. To these traits should be added a thorough-paced treachery, and, what might seem rather inconsistent with their other qualities, a large share of vanity and an immoderate love of praise.

[The author has much more to say in this same vein, and gives a detailed and valuable account of their customs, which only his captivity could have enabled him to offer. His adventures were the reverse of pleasant, and he was fortunately successful in the end in inducing them to visit the coast near an island inhabited by whites. Here he made a bold stroke for freedom.]

Our horses’ heads were now turned from the shore, and we rode back about an eighth of a mile to a large clump of bushes, unsaddled our beasts, and waited some time for the rest of our company, who had fallen in the rear. They came at last, our horses were turned adrift, fire was lighted, and, as the day was far spent, supper was in order. Then ensued a repetition—a final one, I trusted—of the grand

present to be levied on the Hollanders [as the natives called the white settlers], and of the speech which was to draw them out. The Indians arranged that I was to hoist the English flag,—the colors of the unfortunate brig “Avon,” which they had brought along at my request,—and then to walk the shore to attract the attention of the islanders. On the approach of a boat, I was to be kept back from the beach to prevent escape; for I found that they were not, after all, as well assured of my good faith as might have been desirable. They thought, moreover, that when the white men saw a prisoner with them, they would come ashore to parley and offer presents to effect his release; in that case there might be a chance, if the negotiation proved unsatisfactory, to take bonds of fate in the form of another captive or two. So, at least, there was ground to suspect,—and some cause to fear that the rascals might prove too shrewd for all of us!

After talking till a late hour, the Indians threw themselves upon the ground, stuck their feet into the bushes, and were soon fast asleep. I consulted the chief as to the propriety of modifying this arrangement by placing our heads, rather than our feet, under cover, since both could not be accommodated. He declined any innovations, and told me to go to sleep. I stretched myself on the ground, but as to sleep that was out of question. I lay all night thinking over every possible expedient for escape. We had no materials for a boat or raft of any description, and it was impossible to think of any plan that promised success; so that, after tossing in body and mind through the weary hours of night, I could only resolve to wait the course of events, and to take advantage of the first opportunity affording a reasonable hope of deliverance from this horrid captivity. Snow, sleet, and rain fell during the night; and I rose early, thoroughly chilled, every tooth

chattering. A fire was kindled and the last morsel of meat that remained to us was cooked and eaten. The weather continued squally till the middle of the afternoon.

After breakfast the chief went with me to the shore, bearing the flag. On the beach I found a strip of thick board, to which I fastened the colors, and then planted it in the sand. The bushes around, which have a kind of oily leaf, and readily ignite, were set on fire. I then walked to the beach,—but no boat came. When it cleared up sufficiently to see, I observed little objects moving about on the island. The day wore away with fruitless attempts to attract their attention. With an aching heart I returned, at dark, to the camping-ground. On this island my hopes had so long centred,—if they were now to be disappointed, how could I endure it? The Indians began to talk of re-joining the tribe the following day; I opposed the motion with all the dissuasives at command, assuring them that at sight of our flag the islanders would surely come over in a boat, and that, if they would only wait a little, they could go over to the island and enjoy themselves to their heart's content; representing the absolute necessity that I should procure the rum, etc., we had talked of, and how embarrassing it would be to go back to the tribe empty-handed, after all that had been said, to be ridiculed and reproached. It would never do.

Our conversation was continued till quite late, when we ranged ourselves, hungry and weary, for another night. For hours I was unable to sleep. The uncertainties of my situation oppressed me, and I lay restless, with anxiety inexpressible, inconceivable by those whom Providence has preserved from similar straits. It was a season of deep, suppressed, silent misery, in which the heart found no relief but in the mute supplication to Him who was alone able to deliver. Towards morning, exhausted with the in-

tensity of emotion acting on an enfeebled body, I slept a little, and woke at early dawn, to a fresh consciousness of my critical position.

The weather had been fair during the night, but there were now indications of another snow-storm. I waited long and impatiently for my companions to awake, and at last started off in quest of fuel, on returning with which they bestirred themselves and started a fire, which warmed our half-benumbed limbs. There lay the little island, beautiful to eyes that longed, like mine, for a habitation of sympathizing men, about a mile and a half distant. It almost seemed to recede while I gazed, so low had my hopes sunken under the pressure of disappointment and bitter uncertainty. A violent snow-storm soon setting in, it was hidden from view; everything seemed to be against me. It slackened and partially cleared up; then came another gust, filling the air and shutting out the prospect.

In this way it continued till past noon; at intervals, as the sky lighted up, I took a firebrand and set fire to the bushes on the beach, and then hoisted the flag again, walking wearily to and fro till the storm ceased and the sky became clear. The chief concealed himself in a clump of bushes, and sat watching with cat-like vigilance the movements of the islanders. After some time he said a boat was coming; I scarcely durst look in the direction indicated, lest I should experience a fresh disappointment; but I did look, and saw, to my great joy, a boat launched, with four or five men on board, and pushing off the shore. On they came; the chief reported his discovery, and the rest of the Indians came to the beach, where I was still walking backward and forward. The boat approached, not directly off where I was, but an eighth of a mile, perhaps, to the windward, and there lay on her oars.

The Indians hereupon ordered me to return to the

camping-ground, but, without heeding them, I set off at a full run towards the boat. They hotly pursued, I occasionally turning and telling them to come on, that I only wanted to see the boat. "Stop! stop!" they bawled. "Now, my legs," said I, "if ever you want to serve me, this is the time." I had one advantage over my pursuers: my shoes, though much the worse for wear, protected my feet from the sharp stones, which cut theirs at every step; but, under all disadvantages, I found they made about equal speed with myself. As I gained a point opposite the boat, the Indians slackened their speed and looked uneasily at me; the man in the stern of the boat hailed me, inquiring what Indians these were, what number of them, and how I came among them. I replied in as few words as possible, and told him we wished to cross to the island. He shook his head; they were bad fellows, he said; he could not take me with the Indians. They began to pull away. I made signs of distress and waved them to return, shouting to them through my hands. The boat was again backed within hailing distance. "Will you look out for me if I come by myself?" "Yes," was the prompt reply.

The Indians all this time had kept within ten or fifteen feet of me, with their hands on their knives, and reiterating their commands to come back, at the same time edging towards me in a threatening manner. "Yes, yes," I told them, "in a moment; but I want to look at the boat,"—taking care, however, to make good my distance from them.

At the instant of hearing the welcome assurance that I should be cared for, I drew out the watch (which I had brought, according to promise, to have a new crystal inserted at Holland), and threw it into the bushes; the salt water would spoil it, and, if I *should* be retaken, the spoiling of that would be an aggravation which might prove

fatal. At the same moment I gave a plunge headlong into the river; my clothes and shoes encumbered me, and the surf, agitated by a high wind, rolled in heavy seas upon the shore. The boat was forty or fifty yards off, and, as the wind did not blow square in shore, drifted, so as to increase the original distance, unless counteracted by the crew. Whether the boat was backed up towards me I could not determine; my head was a great part of the time under water, my eyes blinded with the surf, and most strenuous exertion was necessary to live in such a sea.

As I approached the boat I could see several guns, pointed, apparently, at me. Perhaps we had misunderstood each other; perhaps they viewed me as an enemy. In fact, they were aimed to keep the Indians from following me into the water, which they did not attempt. My strength was fast failing me; the man at the helm, perceiving it, stretched out a rifle at arm's length. The muzzle dropped into the water and arrested my feeble vision. Summoning all my remaining energy, I grasped it, and was drawn towards the boat; a sense of relief shot through and revived me, but revived, also, such a dread lest the Indians should give chase, that I begged them to pull away, I could hold on. The man reached down and seized me by the collar, and ordered his men to ply their oars. They had made but a few strokes when a simultaneous cry broke from their lips, "Pull the dear man in! Pull the dear man in!" They let fall their oars, laid hold of me, and, in their effort to drag me over the side of their whale-boat, I received some injury. I requested that they would let me help myself, and, working my body up sufficiently to get one knee over the gunwale, I gave a spring with what strength was left me, and fell into the bottom of the boat.

They kindly offered to strip me and put on dry clothing ;

but I told them, if they would only work the boat farther from the shore, I would take care of myself. They pulled away, while I crawled forward, divested myself of my coat, and put on one belonging to one of the crew. Conversation, which was attempted, was impossible. It was one of the coldest days in a Patagonian winter. I was chilled through, and could only articulate, "I ca-n't talk now; I'll talk by a-and by." Some liquor, bread, and tobacco, which had been put on board for my ransom, on supposition that this was what the signal meant, was produced for my refreshment. The sea was heavy, with a strong head-wind, so that, though the men toiled vigorously, our progress was slow. I was soon comfortably warmed by the stimulants provided, and offered to lend a hand at the oar, but the offer was declined. The shouts and screams of the Indians, which had followed me into the water, and rung hideously in my ears while struggling for life in the surf, were kept up till distance made them inaudible. Whether they found the watch, whose mysterious tick at once awed and delighted them, and restored it to its place of state in the chief's lodge, or whether it still lies rusting in the sands by the sea-shore, is a problem unsolved.

The boat at last grounded on the northern shore of the island. Mr. Hall, the gentleman who commanded the party, supported my tottering frame in landing, and, as we stepped upon the shore, welcomed me to their island. I grasped his hand and stammered my thanks for this deliverance, and lifted a tearful eye to heaven in silent gratitude to God. I was then pointed to a cabin near by, where a comfortable fire was ready for me. "Now," I heard Mr. Hall say, "let us fire a salute of welcome to the stranger. Make ready! Present! Fire!" Off went all their muskets, and a very cordial salute it appeared to be.

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